

June 2013



Newsletter of the County of Orange Radio Amateur Civil Emergency Service

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Captain's Corner

by RACES Captain Ken Bourne, W6HK, Chief Radio Officer

6 Meters: The Magic Band

Members of OCRACES, city RACES units, and MOU organizations need a “hang-out” frequency on HF or 6 meters—not on a repeater—not only where we can exchange ideas about emergency communications, but also where we can enjoy talking about our technical projects and occasionally experience some unusual propagation to other areas. I propose 6 meters, maybe 50.150 MHz SSB (upper sideband), for that purpose.

Why am I encouraging all of you RACES members to jump on that most magical of ham bands? It's so you can have the same experiences I've had for more than 50 years with unusual propagation on 6 meters. Also, 6 meters is easier to get on than when I began my ham life in 1956. Most amateur transmitters and receivers in those days did not cover 6 meters. Many amateurs considered 6 meters to be some mysterious band that should be avoided because of Channel 2 TVI. Those few who were on the band had homebrew transmitters and International Crystal converters or Gonset Communicators. Then along came Clegg transmitters and receivers and a few other brands. In 1960, I borrowed a 6-meter Gonset Communicator, and I was hooked!

Even though you don't have to worry about Channel 2 TVI anymore (now that we are in the age of digital broadcast TV on higher channels, or cable and satellite TV), 6 meters is not for everyone. Those who are looking for constant band openings, lots of rare DX, and many stations to work during

a contest might be disappointed. Those who are only interested in using an HT to talk through local repeaters with a small antenna will probably not be interested in 6 meters (or HF, for that matter). Some HTs, such as my Yaesu VX-8R, operate on 6 meters, but,

because of an inadequate counterpoise with the small HT case, the radiated signal won't propagate very far. If I'm on the second floor of my house in Orange, though, I can key up the OCRACES repeater on 52.62 MHz with my HT.



Gonset 6 Meter Communicator was a popular AM transceiver in the 1950s and 1960s.

However, I'm addressing this to those of you who have a sense of adventure, who like to be surprised by infrequent band openings caused by unusual propagation conditions, who like to experiment with high-gain antennas that are relatively small (compared to some of those HF monsters), and who like to chase weak signals, using low-loss transmission lines and low-noise preamplifiers. 6 meters also has some interesting applications for RACES.

Have you noticed the long antennas on CHP patrol cars? They operate on VHF low-band, just below the 6-meter band, providing coverage over longer distances than on VHF high-band or UHF. VHF low-band

**The Next
OCRACES
Meeting Is**

June 3, 2013
1930 Hours

840 N. Eckhoff Street,
Suite 104, Orange

Peter Putnam, NI6E
Packet Transfer of
ICS-213 Text Form



Orange County Sheriff's Department
Communications & Technology Division

Continued on page 2

Captain's Corner *Continued from page 1*

and 6 meters also work better than 2 meters or UHF into some canyons. OCRACES has a 6-meter repeater on 52.62 MHz, mostly for EOC-to-EOC communications, but available as an open repeater for all amateurs.

Some of the interesting propagation modes that you can experience on 6 meters include tropospheric ducting and temperature inversions, F2 layer long-distance (not common during this dismal sunspot cycle), transequatorial, aurora (bouncing signals off the aurora borealis, which is more common in the northern states, especially in the Midwest and East Coast states), and meteor scatter.

Most modern HF transceivers (including the Elecraft K3 in the Loma Ridge EOC RACES Room) extend up into the low VHF spectrum, providing all modes (SSB, CW, AM, and FM) on 6 meters. (The Icom IC-7200, unfortunately, does not provide the FM mode.) However, if you are still running one of the older HF transceivers without 6-meter coverage, you can add a transverter such as the Down East Microwave L50-28, which has a 28-MHz IF and produces 25 watts output. In that case, you must be able to generate a repeater-offset transmit frequency and a PL tone with your basic transceiver to access repeaters.

MFJ offers a 6-meter-only SSB transceiver, MFJ-9406, covering 50.0 to 50.3 MHz with power output of 10 watts PEP. The price is \$279.95 (\$289.95 with the MFJ-290 microphone). It features syllabic speech processing, single-conversion superheterodyne receiver with low-noise front end, double-balanced mixer, and a 2.3 kHz crystal ladder filter.

Local activity on 6 meters includes an AM net on Sunday mornings at 10:00 AM on 50.400 MHz, conducted by Will Anderson, AA6DD, in Perris. Will also conducts an SSB net on Sunday nights at 8:30 PM on 50.150 MHz. Will is one of the several interesting fellows to talk to on 6 meters. He has extensive knowledge in weak-signal propagation, antennas, receiver design, and restoration of older equipment, and is eager to share his knowledge over the air. When he is not having fun with band openings on 6, 10, and 12 meters, you can often find him on 50.3 MHz FM. Most FM activity on 6 meters is much higher in the band, such as the OCRACES repeater on 52.62 MHz, and the national simplex calling frequency of 52.525 MHz. However, to take advantage of antenna SWR, which commonly exceeds 2:1 above 51 MHz, many hams in Southern California have chosen to hang out on 50.3 MHz FM.

If you don't want to tie up your HF/6-meter transceiver with monitoring the OCRACES repeater or the national calling frequency or 50.3 MHz, you could use a



MFJ-9406 6-meter SSB transceiver with MFJ-290 mic.

separate FM-only radio for that purpose, such as a surplus Motorola VHF low-band radio, including the Maratrac and the Syntor X-9000 (which also covers 10 meters FM!), or the Alinco DR-06T. The DR-06T features a 50-watt transmitter and 100 memory channels.

Radios such as the Alinco have a default repeater offset of 1 MHz, which is common elsewhere in the country. Those radios will need to be reprogrammed for the common Southern California repeater offset, which is minus 500 kHz. (The OCRACES repeater output is 52.62 MHz and the input is 52.12 MHz, with a PL of 103.5 Hz.)

Will promotes using vertical polarization on 6 meters, even on SSB and AM, and most of the stations who check into his AM net are vertically polarized. However, many contesters and long-haul weak-signal operators prefer horizontal polarization. I am currently running a ground-plane antenna on 6 meters, but I might put up a horizontal loop for local omnidirectional coverage and a horizontal yagi for higher gain over long distances. Cushcraft offers a half-wave square loop, called the Squalo ASQ-6, for 6 meters, with a price of \$139.95. A yagi with only three or four elements can be handled easily by a relatively inexpensive TV-antenna rotator. MFJ offers the MFJ-1762 three-element yagi at \$99.95. The boom is 6 feet long, and the antenna weighs just 2 pounds. It mounts vertically or horizontally. The CushCraft A50-3S three-element yagi is \$139.95. The Hy-Gain four-element yagi is priced at \$144.95. Arrow Antenna offers its Model 52-4S four-element yagi for \$139.00. You might even consider a "Moxon" antenna for 6 meters, especially if you have limited space. MFJ offers the MFJ-1896 Moxon for \$69.95. It features a broad cardioid pattern and has a gain roughly the equivalent of a 2-element yagi and a high front-to-back ratio. Element span is only 7 feet on a 34-inch boom, with turning radius of under 4 feet. I hope to see you on 6 meters!



Alinco DR-06T 6-meter FM transceiver.

Next OCRACES Meeting: June 3rd

The next County of Orange RACES meeting is on Monday, June 3, 2013, at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange. Newport Beach RACES Member Peter Putnam, NI6E, will demonstrate packet transmission and reception of a text-based ICS-213 form, using RMS Express software in peer-to-peer mode.

Also at this meeting, RACES Lt. Ralph Sbragia, W6CSP, will conduct a "Field Day 101" course.

A new *Information Manual* will be distributed to all members at this meeting. Members are requested to turn in their old *Information Manual* when they receive the new edition.

All OCRACES officers are asked to arrive early, at 6:30 PM, to conduct an oral interview of an OCRACES applicant in the small conference room at Eckhoff.

HRO HAM JAM: June 15th

Ham Radio Outlet, 933 N. Euclid Street, in Anaheim, is sponsoring "HAM JAM" on Saturday, June 15, 2013, the week before Field Day, from 10:00 AM until 5:30 PM. OCRACES will exhibit its emergency communications response vehicle. The focus will be on preparing for Field Day and emergency communications, including seminars on operating, organizing, and assembly tips. Representatives from major brands of ham radio equipment will be available to answer questions. The American Heritage Girls will serve hot dogs, chips, and soda lunches for \$2. Three prize drawings will be awarded throughout the day. Amateur radio licensing tests will be offered in the afternoon.

Field Day: June 22-23

OCRACES will participate again in Field Day this year, on Saturday, June 22, and Sunday, June 23, 2013, at Craig Regional Park in Fullerton. Radio Officer Ralph Sbragia, W6CSP, is the Field Day Coordinator. Ralph will conduct a "Field Day 101" course at the June 3rd OCRACES meeting at 7:30 PM, at 840 N. Eckhoff Street, Suite 104, in Orange.

This event will give us practice in setting up the OCRACES emergency communications response vehicle, generators, antennas, and HF and VHF transceivers. We will also practice establishing fast contacts with stations around the country, using operating/logging software, and observing changing propagation conditions. Field Day will also include a barbecue at 5:00 PM on Saturday, and participants' families and friends are invited to attend (and bring some food!).

Besides operating from our communications van, Ralph will bring his personal communications trailer, and OCSD Emergency Communications Manager Delia Kraft, KF6UYW, will bring her trailer and camp out at our site for the entire event. Setup will begin at 8:00 AM on Saturday.

We invite other organizations to join us at Craig Park, especially City RACES units that have not already planned their own Field Day operations. We would also like to know which City RACES units and MOU organizations are participating in Field Day, and where they will operate, including their start and end times, and if they invite other groups to join them in the event.

Crisis Response Training: June 12-13

The Crisis Response Network (CRN) Individual Crisis Response Training is being offered at no cost to residents and professionals in Orange County by the County of Orange Health Care Agency Behavioral Services, Prevention and Intervention Division, on Wednesday, June 12, and Thursday, June 13, 2013, from 8:30 AM to 4:00 PM, at Santiago Canyon College, 8045 E. Chapman Avenue, Room E-206, in Orange. Attendance is required for both days. The training is offered to current crisis responders, new crisis responders, and prospective members. Training will provide opportunities for mock incident practice. Materials and crisis response tools will be provided. 12 CE credits will be available. Training will cover:

- ◆ Introduction to critical incident stress management (CISM) and best practice
- ◆ Crisis response intervention for individuals, including the SAFER model
- ◆ International Critical Incident Stress Foundation (ICISF) certificates

To register by Monday, June 3, 2013, contact Tina Rocha at troche@ocde.us or 714-953-6513 x2472.

RACES and MOU units Conduct May 4th Drill

The City/County RACES & MOU ACS exercise that occurred on Saturday, May 4, 2013, from 9:00 AM until 11:00 AM, focused on a hazardous-spill scenario, with simulated terrorist involvement, which generated a large amount of interesting traffic. For messages, we used an ICS-213 form that was modified by Seal Beach RACES. It met with general approval, but further modifications were made to the form after this drill. The new form is now posted on the OCRACES Web site.

OCRACES members participating at the Loma Ridge EOC RACES Room included John Bedford, KF6PRN, Randy Benicky, N6PRL, Chief Radio Officer Ken Bourne, W6HK, Radio Officer Scott Byington, KC6MMF, Jim Dorris, KC6RFC, Brian Lettieri, KI6VPF, Sue Mickelson, KJ6LCJ, Fran Needham, KJ6UJS, Radio Officer Harvey Packard, KM6BV, Tom Riley, K6TPR, Radio Officer Ralph Sbragia, W6CSP, and Applicants Bob McFadden, KK6CUS, and Ken Tucker, WF6F. City RACES Units that participated included Brea, Costa Mesa, Fountain Valley, Fullerton, Irvine, Laguna Beach, Laguna Niguel, Laguna Woods, Los Alamitos, Mission Viejo, Newport Beach, Seal Beach, and Westminster. Participating MOUs included American Red Cross, Hospital Disaster Support Communications System, and Orange County SKYWARN. The drill plan was written by OCSO Emergency Communications Manager Delia Kraft, KF6UYW, who, with Randy Benicky, conducted the simplex voice exercise on a hill outside the EOC. Ralph Sbragia operated the Winlink station.



Lt. Ralph Sbragia, W6CSP, communicates with City RACES units via Winlink.



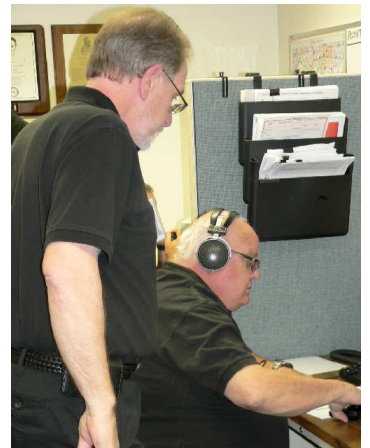
Tom Riley, K6TPR (left), and Sue Mickelson, KJ6LCJ, receive incoming traffic on the 449.100 MHz OCRACES repeater from City RACES units and MOUs.



Fran Needham, KJ6UJS, accepts messages from City RACES units and MOUs on the OCRACES 146.895 MHz repeater.



OCRACES Applicant Bob McFadden, KK6CUS (left), listens as Lt. Harvey Packard, KM6BV, explains drill operations while Brian Lettieri, KI6VPF, sends drill messages to City RACES units and MOUs.



Jim Dorris, KC6RFC (left), coaches John Bedford, KF6PRN, on rapidly sending drill messages to City RACES units and MOUs.

This drill enabled us to examine the quality of voice message exchanges. We also observed the reliability of digital messages via Winlink and e-mail. Several stations reported bounced e-mail messages, and that problem will be investigated.

A simplex voice exercise was conducted during the drill, to test the ability to communicate with as many units as possible, without going through a repeater, and to check message accuracy after relaying through several stations.

Seven RACES units communicated via Winlink. Some messages bounced because of incorrect or expired addresses.

Some stations expected a roll call, while others preferred no roll call, in order to expedite handling the many messages related to the scenario. The question remains whether a roll call is necessary or practical during an actual emergency.

A drill committee, consisting of representatives from county and city RACES units and MOUs, will be formed to discuss planning for the October 5th exercise. All those who are interested in participating in this committee are asked to send an e-mail to delia.kraft@comm.ocgov.com.

Watching the Web

Web Sites of Interest to RACES Personnel

EMTECH Ham Radio Products

<http://emtech.steadynet.com/>



This Web site offers ham radio products such as antenna insulators, QRP gear, etc. The NW Series monoband CW transceiver kits are available for the 80, 40, 30, and 20 meter ham bands. They feature a superheterodyne single-signal receiver, with a variable bandwidth crystal filter. A two-pole active audio filter is optional. The transmitter produces 4 to 5 watts, adjustable down to a few milliwatts. The keying features solid-state antenna switching for true QSK operation. The cabinet includes painted and silkscreened front and rear panels. All hardware and knobs are included.

The ZM-2 ATU (antenna tuning unit) kit has no inductance switching—just two variable capacitors to tune. It tunes random, long, and short wire antennas, balanced fed antennas such as loops, deltas, dipoles, verticals, and V's, on 80 through 10 meters. All parts are supplied, including a front-panel label and either BNC or UHF (SO239) connectors. It handles up to 15 watts.



ZM-2 ATU 15-watt antenna tuner kit tunes antennas with two variable capacitors (no inductance switching). It covers 80-10 meters.

Stainless-steel hardware is used throughout. End insulators are also furnished with the kit.

The Ladder-Grabber antenna insulator kit provides a secure, durable, and sealable support for ladder-line-fed wire antennas such as dipoles, V's, slopers, loops, zepps, G5RV, etc.

The Coax-Grabber antenna insulator kit is a secure, durable, and sealable center insulator for coax-fed wire antennas such as dipoles, loops, etc. It is sized for RG-58/U, RG-6/U, and RG-8/U coaxial cable. It is tested at 1.5 kW and supports over 150 pounds. Its special plastic resists UV rays.



Coax-Grabber antenna insulator kit for coax-fed wire antennas. It is sized for RG-58/U, RG-6/U, and RG-8/U.



NW Series monoband QRP CW transceiver.

Simplex Net on June 24th

Rather than our usual weekly OCRACES net on the 146.895 MHz repeater, we will conduct a simplex net instead on June 24, 2013. Instead of doing that on the primary OCRACES 2-meter simplex frequency, this time we will run the simplex net on the repeater output, direct on 146.895 MHz. Throughout the net, Net Control will remind participants that they need to transmit on the output of the repeater. All net participants (city and county RACES and MOU members) need to program their radios to transmit on the repeater output for the June 24th net, so they won't be "scolded" by Net Control for transmitting through the repeater!

The Net Control operator (scheduled to be John Bedford, KF6PRN) is encouraged to operate the net from the Loma Ridge EOC RACES Room, for best coverage of the county on simplex. We chose June 24th because that is the day of the monthly Southwest ACS frequency/radio test at 8:15 PM, in which we participate from Loma Ridge. We also check into the Cal EMA weekly net on 75 meters (3960 kHz) at 8:00 PM on Mondays when we are at Loma Ridge.

This will be a good test of simplex coverage throughout Orange County, in case of repeater failure during an emergency. We are planning to run a simplex net several times throughout the year (eventually on the OCRACES primary simplex frequency), as well as nets on our 440-MHz, 222-MHz, and 6-meter repeaters. We may even run nets on 6 meters SSB (see the "Captain's Corner" article in this issue).

RACES/MOU News from Around the County

"RACES/MOU News" provides an opportunity to share information from all City & County RACES/ACS units and MOU organizations in Orange County.

Please send your news to NetControl Editor Ken Bourne, W6HK, at:

w6hk@ocraces.org

Orange RACES

Ken Konecky, W6HHC, reports that the City of Orange Amateur Radio (COAR) RACES activities to provide communications support for the 2013 Orange PD running team in the Baker to Las Vegas Challenge Cup Relay began at least five months before this year's race began. The COAR B2V communications project required the following five phases:

- ◆ Planning sessions
- ◆ Equipment testing workshops
- ◆ Equipment setup for the race
- ◆ Staffing and operating the B2V communications event
- ◆ Post B2V review sessions



Ibex Pass sits on top of a range that blocks radio communications between the B2V starting point and Shoshone. Mike Friese's KF6WRM, car on the right operated as a communications center to relay messages in this critical spot. The left Jeep is Rover-1. (Photo by Bill Burbridge, W6VKO.)

The City of Orange RACES plan included setup of five communications centers along the B2V race course in order to provide a "communications backbone" to support the mobile units used during the race.

- ◆ Ibex Pass, California
- ◆ Shoshone, California
- ◆ Pahrump, Nevada



The X-band repeater at the Sandy Valley communications center sent signals down both sides of the mountain flawlessly—144 MHz on the west side of Mountain Pass and 440 MHz on the east. (Photo by Dick Bruno, N6ISY.)



This group photo (by Ken Konecky, W6HHC) shows most of the 30 ham volunteers who helped COAR RACES provide communications for the Orange PD running team. The Orange PD volunteer coordinator for COAR RACES is Carmen Cardenas (dark shirt in middle of photo).

- ◆ Sandy Valley Road (near Route 160), Nevada
- ◆ Las Vegas, Nevada

Orange County SKYWARN

Free weather spotter training, provided by the National Weather Service (NWS), will be conducted on June 5, 2013, from 6:00 PM until 8:00 PM at the Dana Point City Hall, City Council Chambers, 33282 Golden Lantern. When spotters note a significant weather event, they identify it and report the information to the NWS in a brief message. Significant events can be heavy surf, waterspouts, strong winds, intense rain, snow, hail, thunderstorms, flooding, thick fog, extreme heat or cold, even tornadoes. Spotter reports help fill gaps that radar and satellites can't cover. Spotter reports, which include location, elevation, and a description of the severity of the conditions, can help the NWS develop and pinpoint advisories or warnings. When appropriate, the NWS gives the information to flood control agencies, Cal EMA, county and city emergency management offices, police and fire departments, and other agencies. Training will cover the following:

- ◆ Heavy rain and flooding impacts
- ◆ High winds, fire weather, and Santa Ana winds
- ◆ Winter storms and weather patterns
- ◆ Marine weather, rip currents, and surf
- ◆ Basics of monsoon thunderstorms and lightning
- ◆ How to sign up and report weather

June 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 <i>OCRACES Meeting & Weekly ACS Net</i>	4	5	6	7	8
9	10 <i>Weekly ACS Net</i>	11 <i>OCRACES Officers Meeting</i>	12	13	14	15 <i>HRO HAM JAM</i>
16	17 <i>Weekly ACS Net</i>	18	19	20	21	22 <i>Field Day</i>
23 <i>Field Day</i>	24 <i>Weekly ACS Net & SWACS Radio Test</i>	25	26	27	28	29
30						

Upcoming Events:

- **Jun 3:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange; demonstration of packet transfer of text-based ICS-213 form
- **Jun 11:** OCRACES Officers Meeting, 1900, 840 N. Eckhoff Street, Suite 104, Orange
- **Jun 15:** HRO HAM JAM, 1000-1730
- **Jun 22-23:** Field Day, Craig Regional Park, Fullerton
- **Jul 1:** OCRACES Meeting, 840 N. Eckhoff Street, Suite 104, Orange; Raspberry Pi microcomputer
- **Aug 17-21:** APCO 2013, Anaheim Convention Center; call Adriana Spirescu at 714-628-7150 to volunteer
- **Sep 16:** City/County RACES & MOU Meeting, 1915, 840 N. Eckhoff Street, Suite 104, Orange



www.ocraces.org



Mission Statement

County of Orange RACES has made a commitment to provide all Public Safety departments in Orange County with the most efficient response possible to supplement emergency/disaster and routine Public Safety communications events and activities. We will provide the highest level of service using Amateur and Public Safety radio resources coupled with technology, teamwork, safety, and excellence. We will do so in an efficient, professional, and courteous manner, accepting accountability for all actions. We dedicate ourselves to working in partnership with the Public Safety community to professionally excel in the ability to provide emergency communications resources and services.

County of Orange RACES Frequencies

- 10 m: 29.640 MHz output, 29.540 MHz input, 107.2 Hz PL (off the air)
 - 6 m: 52.620 MHz output, 52.120 MHz input, 103.5 Hz PL
 - 2 m: 146.895 MHz output, 146.295 MHz input, 136.5 Hz PL*
 - 2 m: 147.480 MHz simplex
 - 1.25 m: 223.760 MHz output, 222.160 MHz input, 110.9 Hz PL
 - 70 cm: 446.000 MHz simplex
 - 70 cm: 449.100 MHz output, 444.100 MHz input, 110.9 Hz PL (private)
 - 70 cm: 449.180 MHz output, 444.180 MHz input, 107.2 Hz PL (private)
 - 23 cm: Off the air until reprogrammed to new coordinated frequencies
- *Primary Net—Mondays, 1900 hours

RACES Program Manager

Delia Kraft, KF6UYW
714-704-7979

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Harvey Packard, KM6BV
Ralph Sbragia, W6CSP

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Jack Barth, AB6VC
Chuck Dolan, KG6UJC
Jim Carter, WB6HAG
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Questions or Comments?
Contact *NetControl* Editor Ken Bourne, W6HK
w6hk@ocraces.org



**“W6ACS ...
Serving
Orange County”**

Meet your County of Orange RACES Members!



Ken Bourne
W6HK



Scott Byington
KC6MMF



Harvey Packard
KM6BV



Ralph Sbragia
W6CSP



Delia Kraft
KF6UYW



Marten Miller
KF6ZLQ



Robert Stoffel
KD6DAQ



Jack Barth
AB6VC



Jim Carter
WB6HAG



Chuck Dolan
KG6UJC



Ernest Fierheller
KG6LXT



John Bedford
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Randy Benicky
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Bill Borg
KG6PEX



Jim Dorris
KC6RFC



Nancee Graff
N6ZRB



Ray Grimes
N8RG



Walter Kroy
KC6HAM



Martin La Rocque
N6NTH



Brian Lettieri
KI6VPF



Sue Mickelson
KJ6LCJ



Fran Needham
KI6UJS



Marty Oh
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