



*Orange County
Radio Amateur
Civil Emergency Service*



OCRACES



*Our 16th year
since 1991*

*Baker to Las Vegas
Challenge Cup Relay Race—2006
April 1-2, 2006*

COMMUNICATIONS MANUAL

www.ocraces.org

County of Orange Radio Amateur Civil Emergency Service

2006 Baker to Las Vegas Challenge Cup Relay Race

Communications Handbook

April 1-2, 2006

SUMMARY

This handbook provides information for teams who are utilizing either amateur radio band voice communications or automated tracking systems. For those teams which are not receiving direct support from OCRACES, there are only two things to remember:

- From 1st Race Start (1130 Saturday) until the last team crosses Mountain Springs Pass (approximately 0700 Sunday), Follow Van position reports may be obtained by calling either:

714-628-7038 or 714-628-7040

Orange County Command Post

- From when the last team crosses Mountain Springs Pass (approximately 0700 Sunday) until all tracked teams have finished, Follow Van position reports may be obtained by calling:

714-287-4745

LV Equipment Recovery

1.0 OCRACES COMMUNICATIONS SYSTEM

1.1 PURPOSE

To establish procedures for handling communications and provide a communications radio system that will be a resource for the teams OCRACES will provide support during the 2006 Baker to Las Vegas Challenge Cup Relay Race. This resource will provide a communications link for tracking the team and in some cases provide assistance should an emergency arise and medical assistance is required.

1.2 OBJECTIVES

To utilize established high level UHF and APRS communications sites with radio coverage, which will have the capability to cover the 120-mile racecourse. The radio coverage will provide communications for car-to-car and car-to-staging locations. To set up and maintain a course wide APRS Vehicle Tracking system and provide a communications Command Post where information about teams supported by OCRACES can be obtained via telephone.

1.3 OVERVIEW

Orange County RACES has coordinated the use of several radio channels in the Amateur Radio bands to support running teams participating in the Baker to Vegas Challenge Cup Relay. **The system has been designed to support the operations of multiple teams using a limited number of frequencies. For this reason, it is important that all transmissions be kept short, concise and professional at all times.**

The primary goal is to provide a communications network along the 138 miles of highway and 120 miles of race course between the cities Baker, Shoshone, Pahrump and Las Vegas. This will be accomplished by establishing communications sites on Turquoise Mountain and Mt. Potosi. All communication sites, follow vehicles and shuttle vehicles will monitor the backbone repeater frequency for emergency or priority traffic. Unfortunately, the OCRACES Command Post will not be in Pahrump this year due to lack of funding for the motel room expense. The OCRACES CP will be established at the Orange County EOC. For this reason, OCRACES will not be able to monitor the voice channels. The CP will only be available by telephone.

The OCRACES communication Command Post (CP) will be monitoring Automatic Position Reporting System (APRS Vehicle Tracking) via global positioning satellite software. This will enable the Command Post to constantly track the vehicles following the runners. As many as 80 GPS equipped vehicles may be using the APRS Vehicle Tracking System this year.

Teams marked with an asterisk in the table below are utilizing OCRACES equipment and or support. Others listed may contact the CP for position information.

2.0 TEAMS, TEAM # AND START TIME:

<u>Agency</u>	<u>Team #</u>	<u>Start Time:</u>	<u>Agency</u>	<u>Team #</u>	<u>Start Time:</u>
Anaheim PD	011	1630	Anaheim PD - 800	193	1300
*Arizona A.G.	141	1400	ATF Los Angeles	054	1300
Baldwin Park PD	176	1300	*Ca DOI Fraud	206	1130
*CHP - Gold	162	1300	Colton PD	122	1400
Corona PD	095	1545	Costa Mesa	074	1730
Eastern Sierra Lawmen	191	1130	El Cajon PD	062	1300
El Monte PD	153	1730	Escondido PD	177	1130
Fontana PD	114	1400	Fremont PD	024	1630
Glendora PD	218	1300	Huntington Bch PD	028	1630
Irvine PD	115	1545	LAPD Mission	173	1730
LASD Malibu	126	1400	LASD Narco	151	1300
LASD Norwalk	032	1630	LASD Temple	068	1300
LASD Transit Serv. Bur.	077	1400	LASD West Hwd	212	1130
Long Beach PD #1	013	1630	Long Beach PD #2	085	1545
*OCDA BOI	056	1730	*OCSD Open	006	1630
*OCSD Inv	117	1300	*OCSD Women	049	1300
Orange PD	057	1545	San Bernardino PD	107	1545
San Bernardino SD	037	1545	San Bernardino SD-Inv	215	1130
San Bernardino SD-MX	214	1545	San Diego DA	086	1730
San Diego SD	174	1130	Law Dawgs (SG/Irw/CC)	201	1130
San Marino et al	167	1130	South Gate PD	164	1300
Tulare SD	516	1130	US Secret Service	025	1630
Ventura Co. SD	200	1130	Women of LASD	061	1730

Start Time:	1130	1300	1400	1545	1630	1730
# of Teams	10	11	5	7	7	6

3.0 THE OCRACES COMMUNICATIONS SYSTEM

The OCRACES Communications System consists of four modes:

- A. **SIMPLEX OPERATION:** 2-meter Vehicle-to-Vehicle communications.
- B. **UHF REPEATER:** UHF repeater sites at Turquoise Peak and Mt. Potosi.
- C. **VHF REPEATER:** The VHF 2-meter repeater site is in Las Vegas.
- D. **APRS VEHICLE TRACKING:** High level digi sites at Turquoise Peak and Mt. Potosi with a Las Vegas Internet interface.

3.1 METHOD OF OPERATION

All vehicle radios should be dual-band mobile. This configuration will allow the following operations:

- A. **UHF REPEATER:** The UHF Repeater radio system should be programmed on the 440 MHz band as:
 - 1. Channel 1 = BLUE ZONE -- 446.900 (-) 123.0 PL
 - 2. Channel 2 = ORANGE ZONE -- 449.950 (-) 136.5 PL
- B. **VHF SIMPLEX:** The Vehicle to Vehicle (simplex) operations should be programmed on the 2-meter band as
 - 1. Channel 1 = Agency assigned frequency(s) & coordinated through the race committee
 - 2. Channel 2 = Las Vegas Repeater --145.160 (s) 136.5 PL

This radio configuration allows the operators (mobile or fixed) to transmit and receive radio traffic on the simplex 2-meter band, while monitoring the UHF repeater 440 MHz system for radio traffic.

3.2 UHF REPEATER OPERATIONAL ZONES

The UHF repeater system consists of two zones. The high-level repeater sites provide almost complete race-course coverage. Common sense and good judgment will determine zone selection along the racecourse. Refer to map on back of communications manual.

A. BLUE ZONE – 446.900 (-) PL. 123.0

The repeater site in Blue Zone is located at Turquoise Peak. The Blue Zone will cover from the city of Baker to approximately Stage 9. The indicated switching point, as shown on the Communications Plan map (back cover), for Blue Zone and Orange Zone is approximate only. Common sense and good judgment will determine zone selection between Stage positions 9 and 10.

B. ORANGE ZONE – 449.950 (-) PL. 136.5

The repeater site in Orange Zone is located on Mt. Potosi. The Orange Zone will cover from approximately Stage 9 to the finish line.

C. LAS VEGAS LOCAL ZONE – 145.160 (-) PL. 136.5

This repeater is located in the city of Las Vegas. It will be used primarily for local administrative traffic. The OCRACES Equipment Recovery Team will monitor the Las Vegas 2-meter repeater.

3.3 SIMPLEX OPERATIONS

Simplex radio operations will be the PRIMARY mode of communications for all mobile vehicles. Each agency (other than GPS only) will be assigned a simplex radio frequency for their agency use. This will allow communications to be conducted between the agency Follow and supporting vehicles without (hopefully) outside interference.

The simplex mode of communications should also be used to communicate to the staging locations whenever possible. Using the simplex communications mode will allow the repeater system to remain free of car-to-car radio traffic. This will allow the handling of emergency communications or passing of radio traffic to and from Las Vegas, and to the staging locations without delay.

2-METER SIMPLEX FREQUENCY ASSIGNMENTS

- YELLOW-1A - OCSD(18) Team 007: 145.770 (PL 203.5 Hz) (primary)
- YELLOW-1B - OCSD(18) Team 007: 145.785 (PL 233.6 Hz) (secondary)
- YELLOW-2 - OCSD(18) Team 160: 147.050
- YELLOW-3 - OCSD(18) Team 221: 147.100

All simplex operations should function with a 136.5 PL unless otherwise indicated above. The simplex frequencies may have to be changed on race day due to interference. The department Communications Team Leader should coordinate frequency changes.

3.4 TEAM TACTICAL CALLS

The use of tactical calls will easily identify the team and specific vehicle. Communications operators should use the tactical call of the mobile vehicle when communicating with other vehicles.

A. CITY TACTICAL CALL SIGNS (The first two digits will be the agency number.)

OCSD Team 006.....	18	OCSD Team 160.....	18
OCSD Team 221.....	18	Corona PD	9
Huntington Beach.....	42	Irvine PD	39
LAPD/North Hollywood.....	15	LASD Ant. Vly.....	11
Orange PD	33	Ventura Co. Team 076	76
Ventura Co. Team 168.....	168	Westminster.....	47

The last two digits denote vehicle duty as shown above. Refer to the chart above if your agency has more than one team in the race.

Under this format, the OCSD Follow van for team 006 will be 1801. The Shuttle for the Huntington Beach team is 4204, and the Catcher for Orange is 3303.

Duty	All Other Teams	Team 160	Team 221
Follow Van	xx01	1821	1831
Expeditor	xx02	1822	1832
Catcher	xx03	1823	1833
Shuttle	xx04	1824	1834
Coordinator	xx05	1825	1835

Tactical call signs will also be used for communications team personnel. The communications coordinator for each team will be assigned the xx50 call sign, and should use it when communicating on the voice repeater system. This will help the command post staff in the event they need to contact a communications leader for a supported team.

To call another unit, state that unit's tactical call sign, followed by your own. For example, 1805 wishes to contact 1802: "1802, 1805". Unit to unit calls on YELLOW and GREEN simplex channels are also conducted this way.

Other Tactical call signs of note:

1850 - OCRACES Event Coordinator and APRS Tech Support - Ralph G. Sbragia (W6CSP)

1851 - OCRACES CP Captain and Assistant Event Coordinator - Scott Byington (KC6MMF)

Baker Installation Contact: Call for 1850 or "Baker Installation" on YELLOW-1 or BLUE

Don't forget – *FCC regulations requires amateur operators to identify every 10 minutes and at the end of a conversation.*

3.6 ORANGE COUNTY COMMAND POST TACTICAL CALL

The tactical call for the Orange County Command Post is "**ORANGE COUNTY CP**". This is the headquarters for OCRACES. The Command Post will be located back in Orange County at the EOC.

TELEPHONE NUMBERS:

714-628-7038 or 714-628-7040

The Orange County Command Post will be a primary location for tracked teams to obtain APRS Tracker/Follow Vehicle location information. This information may be obtained by phoning the Command Post at the numbers listed above.

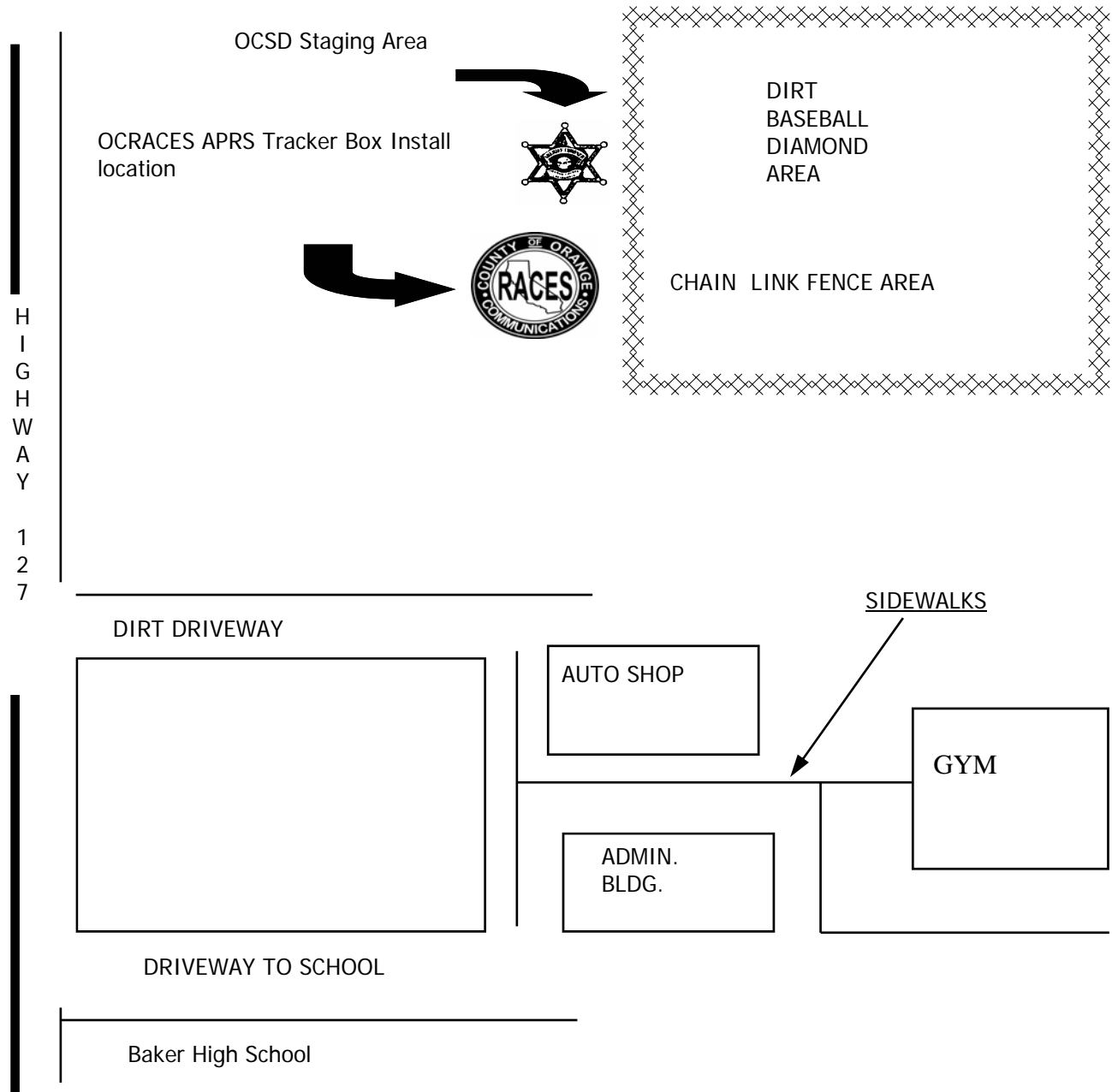
4.0 LIVE INTERNET RACE COURSE COVERAGE

OCRACES supports a Vehicle Tracking System that will utilize Automatic Position Reporting System (APRS) equipment in the Follow Vehicles on the racecourse. The Tracker data will be transmitted from these vehicles to high-level digi sites and then into Las Vegas where it will be connected to the Internet. Live racecourse coverage may be viewed at:

<http://www.b2vtracking.com>

5.0 APRS INSTALLATION LOCATION

The OCRACES APRS Tracker Box installation team will be at Baker High School Saturday to begin installations at noon. The installation area is just north of the main High School building area and in a large dirt area on the east side of the highway. Look for a red Ford Explorer. Ralph G. Sbragia W6CSP is the Installation Coordinator.

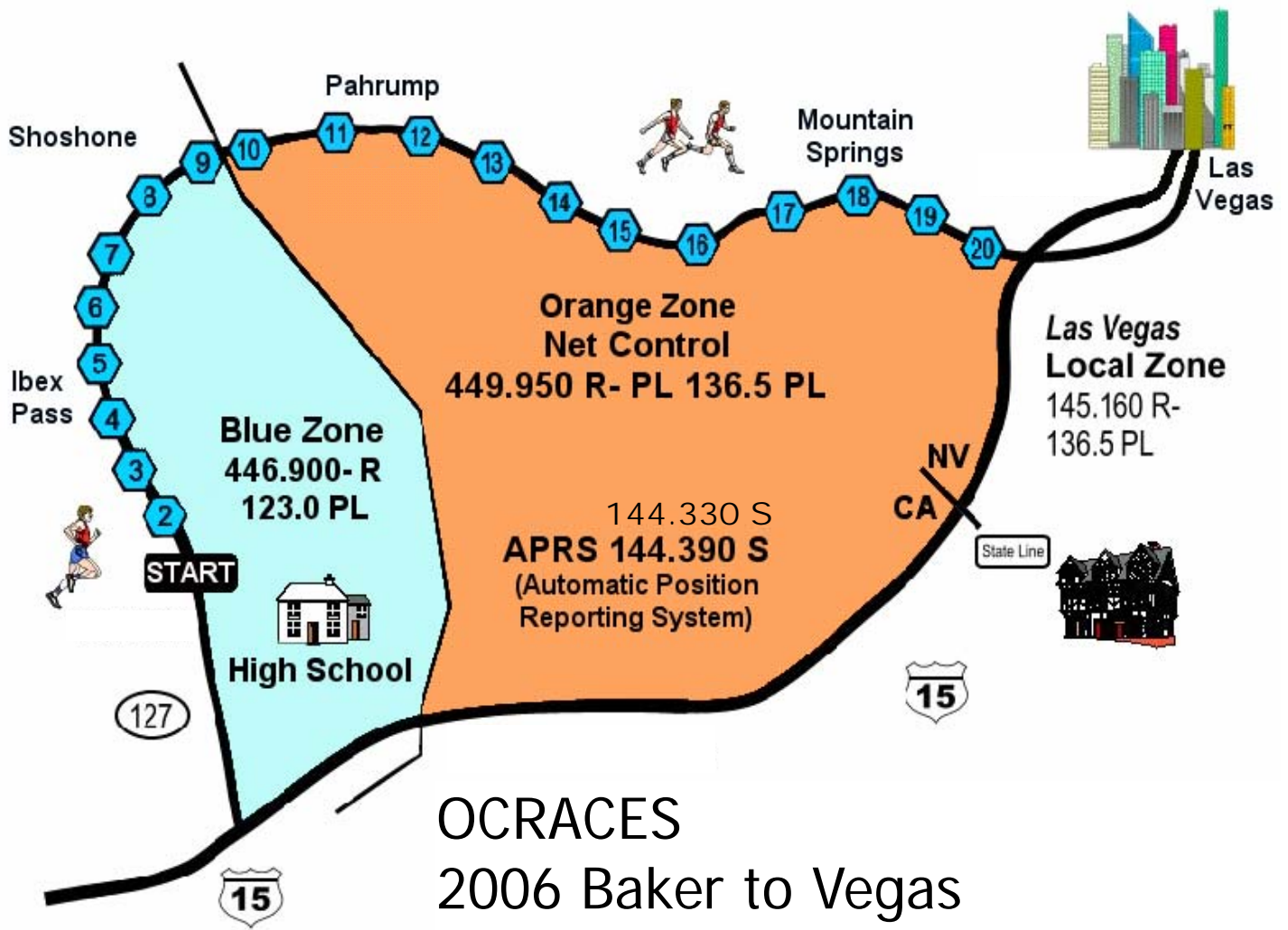


6.0 APRS EQUIPMENT REMOVAL LOCATION

The OCRACES equipment removal team will be in the Finish Line parking lot as your team finishes the race. **Remind your Follow Vehicle Driver to Check in BEFORE leaving or Securing the Van.** We will remove the tracker box, antennas and wiring and lock your vehicle while you attend to the finish of the race. Ralph G. Sbragia, W6CSP is the coordinator.



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