UNITED STATES MARINE CORPS
HEADQUARTERS MARINE CORPS AIR STATION MIRAMAR
PO BOX 452000
SAN DIEGO CA 92145-2000

IN REPLY REFER TO:

StaO 8020.3
5BA9

20 SEP 1998

STATION ORDER 8020.3

From: Commanding Officer
To: Distribution List

Subj: HAZARDS OF ELECTROMAGNETIC RADIATION TO ORDNANCE (HERO) EMISSIONS CONTROL (EMCON) BILL

Ref: (a) Naval Surface Warfare Center, Dahlgren Division, Hazards of Electromagnetic Radiation to Ordnance Assessment of Naval Air Station Miramar, California, Feb 96
(b) Naval Surface Warfare Center, Dahlgren Division, Hazards of Electromagnetic Radiation to Ordnance Assessment of Base Realignment and Closure Project for Marine Corps Air Station Miramar, California, June 97
(c) NAVORD OP-3565/NAVAIR 16-1-529/NAVELEX 0967-LP-624-6010, Electromagnetic Radiation Hazards (Hazards to Ordnance), Volume II, Revision 6, Change 9

Encl: (1) HERO Notification List HERO EMCON Bill for MCAS Miramar
(2) HERO EMCON Bill for MCAS Miramar
(3) Mobile HERO Warning Placard
(4) RADHAZ ADVISORY SIGN
(5) Transmitter Locations and Emission Parameters
(6) Map Plot of HERO Unsafe Areas on Board MCAS Miramar

1. Purpose. To provide the necessary precautions and procedures for safe handling, transporting, and storing of electrically initiated ordnance when the possibility of exposure to radio frequency (RF) environments exists. Hazards of Electromagnetic Radiation to Ordnance (HERO) is the program concerned with prevention of accidental ignition of Electroexplosive Devices (EED's) in ordnance due to RF electromagnetic fields. Additionally, it will assist users in understanding the basic concepts of RF propagation, as well as the hazards of RF environments to personnel and fuel. Most importantly, it will assist the user to accomplish the following:

a. Identify the HERO classification of electrically initiated ordnance (i.e., HERO SAFE, HERO SUSCEPTIBLE, HERO UNRELIABLE, HERO UNSAFE).

b. Determine the safe separation distances for HERO UNSAFE, HERO UNRELIABLE, and HERO SUSCEPTIBLE ORDNANCE.

c. Analyze the RF environment.

d. Understand and apply the Operational HERO requirements.

2. Requests for changes should be directed to the HERO program coordinator. The following is the change routing path: (1) HERO Program manager, (2) Station Ordnance, (3) Safety Division, and (4) Commanding Officer.

3. Background. Electromagnetic radiation (EMR) hazards stem from the functional characteristics of electrically initiated ordnance. This type of ordnance may be accidentally initiated or its performance degraded by exposure to RF environments. In general, ordnance is most susceptible to RF environments during assembly, disassembly, handling, loading, and unloading. Specifics of ordnance hardware, Cartridge Activated Devices (CAD) installation sites, transmitter locations and emission parameters, and HERO separations are held by the MCAS Miramar HERO Program Coordinator with additional copies held by Station Ordnance and Safety Division.

4. Definitions. Electroexplosive device (EED) is any single discrete unit, device, or subassembly, whose actuation is caused by the application of electric energy which, in turn, initiates an explosive, propellant, or pyrotechnic material contained therein. The term electroexplosive device does not include complete assemblies, which have electric initiators as subassemblies, but includes only subassemblies themselves. The term is synonymous with electric initiator. Ordnance containing EED's or conductive explosive mixtures are categorized in reference (b) as follows:

a. HERO UNSAFE ORDNANCE. Ordnance items containing EED's, whose exposure to the RF environment may cause accidental initiation or detonation, which have not been classified as HERO SAFE or SUSCEPTIBLE by either test or design analysis are HERO UNSAFE ORDNANCE. When internal wiring is physically exposed on any ordnance item, including those having a classification of HERO SAFE or HERO SUSCEPTIBLE ORDNANCE to an RF environment that may cause accidental initiation or detonation, the item is also defined as HERO UNSAFE ORDNANCE. Additionally, when tests are being conducted on an item that result in additional electrical connections to the item or when EED's having exposed wire leads are present, handled, or loaded in any but the tested condition or when the item is being assembled or disassembled, or when such ordnance items are damaged causing exposure of internal wiring, the item is classified as HERO UNSAFE ORDNANCE.

WARNING:

Whenever HERO UNSAFE ORDNANCE or untested ordnance is exposed, setting of EMCON Condition 1 is required.

b. HERO UNRELIABLE ORDNANCE. Any ordnance item, including those having a HERO SAFE ORDNANCE or HERO SUSCEPTIBLE ORDNANCE classification, whose performance is degraded due to exposure to the RF environment, is defined as being HERO UNRELIABLE ORDNANCE when its internal wiring is physically exposed.

(1) When tests are being conducted on the item that result in additional electrical connections to the item.

(2) When EED's having exposed wire leads are present, handled, or loaded in any but the tested condition.

(3) When the item is being assembled or disassembled.

(4) When such ordnance items are damaged causing exposure of internal wiring or components or destroying engineered HERO protective devices.

c. HERO SUSCEPTIBLE ORDNANCE. Any ordnance containing EED's proven (by test or analysis) to be adversely affected by RF energy to the point that the safety and/or reliability of the system are in jeopardy when the system is employed in expected RF environments.

d. HERO SAFE ORDNANCE. Any ordnance item that is percussion initiated, sufficiently shielded, or otherwise protected so that all EED's contained by the item are immune to adverse effects (safety or reliability) when the item is employed in its expected RF environments, provided that general HERO requirements are observed.

e. UNCERTIFIED ORDNANCE. Electrically initiated ordnance, which has not been analyzed or tested for HERO. The HERO classification will depend upon the consequence resulting from exposure to RF environments. If the item's EED's have a safety consequence or the consequence is unknown, the item will be classified as HERO UNSAFE ORDNANCE. If the item's EED's have a reliability consequence, the item will be considered HERO UNRELIABLE ORDNANCE.

5. Scope. The provisions of this instruction apply to all activities engaged in the handling, storage, and transportation of electrically initiated ordnance or anyone operating devices that may radiate one watt or more of radio frequency power at any frequency (not to include cellular or PCS phones) onboard MCAS Miramar.

6. Responsibilities

a. Activities engaged in operations involving HERO SUSCEPTIBLE ORDNANCE, HERO UNRELIABLE ORDNANCE and/or HERO UNSAFE ORDNANCE must first contact MCAS Operations Officer/Operations Duty Officer to request current HERO condition setting.

b. MCAS Miramar Ordnance Officer shall:

(1) Assist the Operations Officer/Operations Duty Officer in determining the appropriate HERO condition.

(2) MCAS Miramar Ordnance Officer shall ensure coordinate with the HERO Program Manager to ensure a HERO survey is conducted during the month of February 2001.

c. MCAS Operations Officer/Operations Duty Officer shall:

(1) Coordinate HERO requirements with the HERO program manager, Ground Electronics Maintenance Officer and/or Ordnance Officer in determining the level of HERO condition required, and carrying out the HERO condition.

(2) Notify commands/activities and visiting squadrons/ organizations listed in enclosure (1) as to condition set and provide them details about the evolution requiring HERO.

(3) Notify the requesting activity that the appropriate HERO condition is set, and handling, loading, or unloading HERO SUSCEPTIBLE ORDNANCE, HERO UNRELIABLE ORDNANCE and or HERO UNSAFE ORDNANCE may commence.

(4) Alert the Air Traffic Control Watch Supervisor and the GEMD duty technician of the current EMCON setting.

(5) Ensure applicable electronic transmitting devices under his cognizance are secured during HERO conditions as defined in enclosure (2) until after the HERO condition is secured.

(6) Ensure Tower/GCA instructs all aircraft concerning restrictions on radio transmission in effected areas.

(7) Ensure all vehicles with mobile communication capabilities are properly tagged with a mobile HERO Warning Placard, enclosure (3). Ensure all portable hand-held radios are tagged with a properly completed RADHAZ ADVISORY SIGN, enclosure (4).

d. All other applicable station department heads, commanding officers of tenant commands, squadrons, Provost Marshal office shall:

(1) Ensure all vehicles under their cognizance with mobile transmitters are tagged with enclosure (1), which are affixed by the Ground Electronics Maintenance Division (S-6); and, do not transmit within the indicated distance in enclosure (2), Table 2, during HERO UNSAFE/ SUSCEPTIBLE conditions.

Enclosure (5) lists transmitter locations and emission parameters. Enclosure (6) is the Map Plot of HERO Unsafe Areas on Board MCAS Miramar.

(2) As applicable, notify contractors who have mobile transmitters that transmission during HERO UNSAFE/SUSCEPTIBLE conditions is prohibited and ensure they are familiar with the various HERO UNSAFE areas.

e. Squadron commanders shall:

(1) Request the MCAS Miramar Operations Officer/Duty Officer have applicable HERO conditions set before handling, loading, or unloading HERO UNSAFE/SUSCEPTIBLE ordnance, including those components of the F-14D, F/A-18 NACES ejection seats that are HERO SUSCEPTIBLE.

(2) Ensure applicable maintenance personnel are familiar with and follow the contents of reference (a).

7. Action. All cognizant personnel on board MCAS Miramar are directed to follow procedures of enclosure (2).

T. A. CAUGHLAN

Distribution:
S-3 Operations Officer
S-4 Supply/Ordnance Officer
S-6 Electronics Officer
BRAC USMC Miramar
COMAEWINGPAC
FFD Miramar
3RD MAW MCAS Miramar
Marine Air Group 11
Marine Air Group 16
Marine Air Group 46
Safety

HERO NOTIFICATION LIST

The Operations Officer/Operations Duty Officer will notify the following Activities when ever there is a change in the current HERO setting:

(1) Operations Officer or Operations Duty Officer, MCAS Miramar

(2) Third Marine Aircraft Wing, MCAS Miramar (Duty Officer)

(3) Provost Marshal Office MCAS Miramar

(4) Marine Aircraft Logistics (MALS) Eleven (Duty Officer)

(5) Marine Aircraft Group (MAG) Forty Six (Duty Officer)

(6) Marine Aircraft Group (MAG) Sixteen (Duty Officer)

(7) Provost Marshal Office MCAS Miramar

(8) Public Works Officer, Naval Station, San Diego

(9) Visiting Organizations/Squadrons aboard MCAS Miramar

HERO EMCON BILL FOR MCAS MIRAMAR

1. When HERO UNSAFE or HERO SUSCEPTIBLE ordnance is handled onboard MCAS Miramar, the following HERO conditions shall prevail:

a. Silence all aircraft transmitters within the hangar or on flight lines within the HERO UNSAFE or HERO SUSCEPTIBLE ORDNANCE separation distances as listed in Chapter 2 of reference (a) during handling, installation, or removal of HERO UNSAFE or HERO SUSCEPTIBLE ORDNANCE. Do not conduct maintenance or operational checks that could cause aircraft transmitters to radiate.

b. Silence aircraft HF transmitters before landing.

2. In the event of an ordnance accident, the ordnance involved must be considered HERO UNSAFE; therefore, emergency response units such as the Fire Department, Airfield Rescue and Fire Fighting (ARFF), Station Ordnance Department, and Provost Marshals Office responding to the scene with radio equipment must maintain a minimum separation distance of 150 feet from the accident site if using four VHF (132-174 MHz) mobile radios. Similarly, a distance of 50 feet must be maintained when using four VHF portable radios. Silence all other radios at the scene, for single radio use, see the separation distance cited in enclosure (5) or Chapter 2 of reference (a) for that specific mobile or portable unit.

3. Refer to Tables 1 and 2 for HERO EMCON applications and procedures.

4. In order to simplify the application of HERO EMCON, the air station has been divided into the following zones (see enclosure (6) for illustration):

Zone 1 -- Magazine area at East Miramar. Includes transportation route to the main station.

Zone 2 -- Airfield from southeastern boundary to Regulus Road. This area encompasses the ordnance buildup area on Regulus Road, the loading area, the three arm/dearm areas, hangars, tarmac (aircraft parking aprons and flight line), and the runways.

Zone 3 -- Regulus Road to the northern boundary of MCAS Miramar.

Table 1

APPLICATIONS FOR HERO

NALC	Ordnance	Activity	Situation/ Location	HERO CONDITION
ALL	HERO SAFE ORDNANCE	Authorized procedures	All	
ALL	HERO UNSAFE ORDNANCE	Exposure	Zone 1 Zone 2	12
			Zone 3	1
ALL	HERO SUSCEPTIBLE ORDNANCE (General)	Presence, Handling and loading	Zone 1 Zone 2 Zone 3	345

TABLE 2
HERO EMCON PROCEDURES

1. HERO CONDITION 0

a. HERO EMCON is not required; all transmitters listed in enclosure (5) may be operated. Observe the general HERO requirements outlined in Chapter 5 of reference (a).

b. Observe the general HERO requirements outlined in Chapter 5 of reference (a).

2. HERO CONDITION 1

a. Maintain the HERO UNSAFE ORDNANCE separation distances for mobile and portable transmitters as listed in enclosure (5).

b. In the event of an ordnance accident, the emergency response units such as Airfield Rescue and Fire Fighting (ARFF), Station Ordnance Department, Provost Marshals Office, and the Fire Department responding to the scene with radio equipment must maintain a minimum separation distance of 150 feet from the accident site if using four VHF (132-174 MHz) mobile radios. Similarly, a minimum separation of 50 feet must be maintained when using four VHF portable radios. Silence all other radios at the scene. For single radio use, see the separation distance cited in enclosure (4) for that specific Mobile or portable unit.

3. HERO CONDITION 2

Apply the following procedures:

Transmitter Equipment	Frequency	Power
ATC Van Pad		
HF transmitters		
AN/GRC-193	2-30 MHz	Silence
AN/URC-94 (V)2	2-30 MHz	Silence
Building 515		
HF transmitters		
AN/URC-97(V)	2-30 MHz	Silence
AN/URC-94(V)2	2-30 MHz	Silence
AN/GRC-193	2-30 MHz	Silence
Building K-213		
RADAR transmitters		
AN/TPS-73	2075 - 2089.5 MHz	Silence

a. Silence all aircraft HF transmitters and maintain the HERO UNSAFE ORDNANCE separation distance for all aircraft transmitters listed in Chapter 2 of reference (b).

b. Maintain the HERO UNSAFE ORDNANCE separation distances for mobile and portable transmitters as listed in enclosure (5).

c. In the event of an ordnance accident, the emergency response units such as the Fire Department, ARFF, Weapons Department, and Provost Marshals Office responding to the scene with radio equipment must maintain a minimum separation distance of 150 feet from the accident site if using four VHF (132-174 MHz) mobile radios. Similarly, a minimum separation of 50 feet must be maintained when using four VHF portable radios. Silence all other radios at the scene. For single radio use, see the separation distance cited in enclosure (5) for that specific mobile or portable unit.

4. HERO CONDITION 3

Apply the following procedures:

Transmitter Equipment	Frequency	Power
Building M323		
HF Transmitters		
GSB-900DX	2-30 MHz	Silence
MILSPEC-1030C	2-30 MHz	Silence
Building 515		
HF Transmitters		
AN/URC-97(V)	2-30 MHz	Silence
AN/URC-94(V)2	2-30 MHz	Silence
AN/GRC-193	2-30 MHz	Silence

a. Silence all aircraft HF transmitters and maintain the HERO UNSAFE ORDNANCE separation distance for all aircraft transmitters listed in enclosure (5).

b. Maintain the HERO UNSAFE ORDNANCE separation distances for mobile and portable transmitters as listed in enclosure (5).

c. In the event of an ordnance accident, the emergency response units such as the Fire Department, ARFF, Weapons Department, and Provost Marshals Office responding to the scene with radio equipment must maintain a minimum separation distance of 150 feet from the accident site if using four VHF (132-174 MHz) mobile radios.

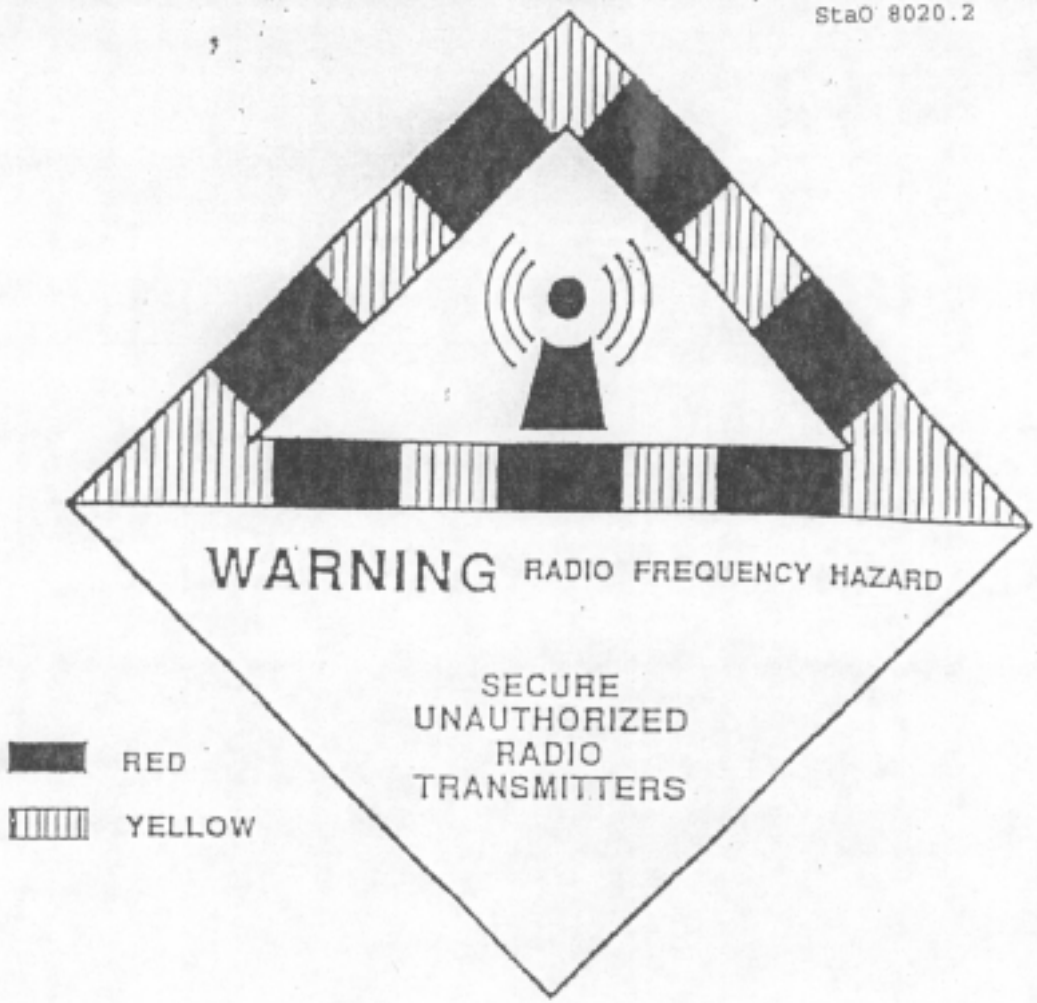
MOBILE HERO WARNING PLACARD

NOTICE

_____ _____
NAME DATE

The mobile radio transmitter installed in your vehicle may cause ignition of explosives on this station. Do NOT energize the transmitter within _____ feet of any ordnance area (Enclosure 4), any ordnance vehicle (indicated by "EXPLOSIVES" sign), or areas specifically marked "NO TRANSMISSIONS AUTHORIZED".

_____
T. J. Storer
HERO Program Manager
S-6/GEMD
MCAS Miramar



MATERIALS: Anodized aluminum with adhesive backing

COLORS: Base material of anodized silver background; black anodized messages in bottom triangle; alternating colored blocks of anodized red and yellow in a border surrounding black anodized logogram in top triangle

LOGOGRAM: Design will be a pictorial presentation of a radar antenna consisting of a pylon with a dot simulating an antenna and concentric arcs simulating pulsed energy

WORDING: The title, WARNING: RADIO FREQUENCY HAZARD, is standard for all signs; the messages in the lower triangle will vary according to particular situation; use of descriptive wording or warning information is the user's option

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
Runway	AAI-ACU-DCP	Cardiod	3	410.075	2	ASOS	10/3	10/3
402	N/A	Whip	2.1	136 - 174	25	Motorola D33MJ	56/17	12/4
495	TDD-6017	Collinear Array	4.5	136-174	60	Motorola L53JJ	119/36	25/8
500	N/A	Whip	2.1	136 - 174	25	Motorola D33MJ	56/17	12/4
505	AT-853/FRC59	Dipole	2.1	150 - 174	10	AT-853/FRC59	33/10	10/3
719	FA-10081	Parabolic	33.5	2790 -2795	1300	ASR-9	1132/345	801/245
719	Unknown	Parabolic	22.5	1030.0	331	Mode S Beacon	436/132	222/67
550	AT-853/FRC59	Dipole	2.1	150 - 174	10	AT-853/FRC59	33/10	10/3
570	N/A	Whip	2.1	136 - 174	30	Motorola L43BB	62/19	13/4
624	N/A	Whip	2.1	136 - 174	30	Motorola D43BB	62/19	13/4
684	N/A	Whip	21.	136 - 174	25	Motorola D33MJ	56/17	12/4
K-209	AT-853/FRC59	Dipole	2.1	136 - 151	7	GE P5xHxx6	30/9	10/3
K-213	N/A	Whip	2.1	136 - 151	7	GE P5xHxx6	30/9	10/3
K-215	N/A	Whip	2.1	136 - 174	25	Motorola L43TR	56/17	12/4
K-223	AT-853/FRC	Dipole	2.1	132 - 162	10	RCA BBA3-BA11	37/11	10/3
K-224	N/A	Whip	3.8	136 - 162	40	Midland 70-342AXL	86/26	19/6
K-227	N/A	Whip	3.8	136 - 162	40	Midland 70-342AXL	86/26	19/6
K-229	N/A	Whip	2.1	150 - 174	10	GE M3Jxxx010	33/10	10/3
K-265	CA-1456	Crossed Dipole	2.1	116-150	15	AN/GRT-21	51/16	10/3
K-265	NT-66095	Dipole	2.1	116 - 150	15	AN/GRT-21	51/16	10/3
K-265	N/A	Whip	2.1	136 - 153	50	GE N5Gxx40	79/24	17/5

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
K-265	AS-768	Dipole	2.1	225 - 400	15	AN/GRT-22	26/8	10/3
K-265	AS-390	Stub	2.1	225 - 400	15	AN/GRT-22	26/8	10/3
K-265	AT-150	Dipole	2.1	225 - 400	15	AN/GRT-22	26/8	10/3
K-265	AS-1018	Collinear Array	5.0	225 - 400	15	AN/GRT-22	37/11	10/3
K-275	AS-3160/UPN AS-3161/UPN	Phase Dipole	39.7 40.3	9080	79.2	AN/FPN-63 (EL) (AZ)	177/54 189/58	125/38 134/41
K-276	OE-258/URN	Parasitic Array	6.0	962 - 1215	120	AN/URN-25	42/13	20/6
K-647	AT-853/FRC	Dipole	2.1	132 - 162	10	RCA Bba33-BA11	37/11	10/3
2000	UNISYS	Parabolic	45.0	2735	3600	K750 NEXRAD	7221/2200	5111/1560
2001(P) Forestry	N/A	Dish	22.0	933.775 – 934.375	5	60-L840-60	56/17	27/8
Various	SCALA PPU-75	Dipole	1.0	75.325	1	EST MOD-95 (Fire Alarms)	18/5	10/3
LSO	AS-390	Stub	2.1	225 - 400	20	AN/GRC-171	30/9	10/3
LSO	N/A	Whip	2.2	136 - 174	25	Motorola D33MJ	56/17	12/4
M-310	N/A	Whip	2.1	146 - 174	10	GE M5Jxxx010	33/10	10/3
M-310	N/A	Whip	2.1	136 - 153	50	GE N5Gxxx40	79/24	15/5
M-310	N/A	Whip	2.1	136 - 174	25	Motorola D33MJ	56/17	12/4
M-310	N/A	Whip	2.1	136 - 151	7	GE P5xHxx6	30/9	10/3
M-316	N/A	Whip	2.1	148 - 174	10	GE CE4xxxxH	33/10	10/3
M-13 MWSS-73	AS-2906/PPS	Dish	36.5	1000 - 1200	0.06	AN/PPS-152(V)2	10/3	10/3

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
MTACS	HT-20T	Dipole	2.1	2 – 30	1000 500 100	AN/URC-97(V)	3624/1103 2563 /780 1146/349	362/110 256/78 115/35
MTACS	WS-25/W	Whip	2.1	2 – 30	400 125	AN/ARC-94	2292/698 1281/390	229/70 128/39
MTACS	D-2219	Dipole	1.0	116 – 150 225 – 400	30	AN/VRC-83(V)2	64/19 22/10	13/4 10/3
MTACS	D-2219	Dipole	1.0	225 – 400	50	AN/GRC-171A(V)2	42/13	11/3
MTACS	D-2219	Dipole	1.0	225 – 400	50	AN/GRC-171(V)4	42/13	11/3
MTACS	AS-3900/VRC	Dipole	-1.0	30 – 32 >32 – 76	50	AN/VRC-90A	636/194 257/78	33/10 31/10
MTACS	TAS-100	Whip	2.1	2 – 30	10	AN/PRC-104B	362/110	36/11
					MWCS			
MWCS	OE-468/TRC	Parabolic	40.5	4400 – 5000	1000 500 300 1	(Testing)	1409/429 1092/333 996/304 45/14	997/305 772/236 705/215 32/10
MWCS	AS-3900/VRC	Dipole	-1	30 – 32 >32 – 76	4	AN/MRC-145	180/55 73/22	10/3 10/3
MWCS	AS-368/PRC	Whip	2.1	30 – 32 >32 – 76	4	AN/PRC-119	229/70 93/28	12/4 11/3
MWCS	AT-1011/U	Whip	2.1	2 – 30	100	AN/MRC-138	1146/349	115/35
MWCS	Unknown	Whip	2.1	116 – 150 225 – 400	2	AN/PRC-113(V)3	19/6 10/3	10/3 10/3

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
MWCS	AT-1011/U	Whip	2.1	2 – 30	400	AN/GRC-193	2292/698	229/70
MWCS	AS-4255 AS-1356	Whip Whip	2.1 2.1	2 – 30	100	AN/MRC-142	1146/349 1146/349	115/35 115/35
Weapons Storage Complex								
595	RACON	Parabolic	38	23000	65mW	RAC8264L	10/3	10/3
595	RACON	Parabolic	42	23200	65mW	RAC8015	10/3	10/3
Near B-494	RACON	Parabolic	38	21800	65mW	RAC8264L	10/3	10/3
Near B-494	RACON	Parabolic	42	22000	65mW	RAC8015	10/3	10/3
MACS-1 Det B and MACS-7 Det B								
MACS	AS-3502	Parabolic	28 21	15412-15680 962 – 1213	1400 2.5	AN/TPN-30A	113/34 34/10	758/231 201/61
MACS	OE-449/TPS-73	Phased Array	34 17	2705 – 2895 1030	974	AN/TPS-73	1070/326 397/121	758/231 201/61
MACS	AS-3184/URN	Dipole Array	6.0	962 – 1215	120	AN/URN-25	42/13	21/6
MACS	D-2221	Dipole	1.0	225 – 400	50	AN/GRC-171A(V)	42/13	11/3
MACS	D-2221	Dipole	1.0	225 – 400	50	AN/GRC-171A(V)	42/13	11/3
MACS	AS-390/SRC	Coaxial Stub	2.1	225 – 400	20	AN/GRC-171(V)1	30/9	10/3
MACS	D-2212	Dipole	1.0	116 – 151.975	25	AN/GRC-211	58/18	12/4
MACS	AS-3471/TPN22	Phased Array	39	9000 – 9200	180	AN/TPN-22	246/75	174/53
MACS	ASP-1410	Dipole	2.1	132 – 155	40	AN/VRC-82(V)2	73/22	16/5

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
MACS	Unknown	Stub	0.9	148 – 162	6.0	GE Saber II	22/7	10/3
MACS	AT-1011/U AS-1729/VRC	Whip Whip	2.1 2.1	2 – 30 >30 – 80	100 50	AN/URC-94(V)2	1146/349 327/100	115/35 40/12
MACS	AS-3184/URN	Dipole	6.0	962 – 1213	400	AN/TRN-44	77/23	38/12
MACS	AT-1011/U	Whip	2.1	2 –30	400 100	AN/GRC-193	2292/698 1146/349	229/70 115/35
MACS	Various	Whip	2.1	30 – 32 >32 - 76	4	AN/PRC-77	229/70 93/28	12/4 10/3
Tower Complex								
K-211	D-2218	Dipole	1.0	225 - 400	20	AN/GRC-171(V)	27/8	10/3
K-211	D-2218	Dipole	1.0	225 - 400	40	AN/GRC-171(V)2	38/12	10/3
K-211	D-2218	Dipole	1.0	116 - 152	25	AN/GRC-211	58/18	12/4
K-211	AT-150	Dipole	2.1	115 - 150	5	AN/URC-101	29/9	10/3
K-211	CA-1446	Crossed Dipoles	2.1	116 - 150	15	AN/GRT-21	51/16	10/3
K-211	AS-1018	Collinear Array	5	225 - 400	15	AN/GRT-22	37/11	10/3
K-211 FAA TML	TECOM-160-0094	Dish	42.8	15195	0.15	Terracom TCM-608	10/3	10/3
K-272	T-853/FRC	Dipole	2.1	116 – 150	25	AN/FRC-166	66/20	12/4
MAG-11/MAG-16 (Aircraft)								
CH-46	AS-578/B	Unknown	2.1	225 – 400	20	AN/ARC-51A	30/9	10/3
KC-130	437S-1H	Unknown	2.1	225 – 400	20	AN/ARC-52	30/9	10/3
KC-130	437S-1H	Unknown	2.1	118 - 135.95	25	AN/ARC-84	65/20	13/4
KC-130	WS-25/W	Unknown	2.1	2 -30	400	AN/ARC-94	2292/698	229/70

TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
UH-1N CH-46, CH-53					125		1281/390	128/39
CH-53	WS-25/W	Unknown	2.1	2 - 30	100	AN/ARC-174(V)	1146/349	115/35
KC-130	WS-25/W	Unknown	2.1	2 - 30	400 200	AN/ARC-190(V)	2292/698 1621/494	229/70 162/49
KC-130 UH-1N CH-46	WWS-25/W	Unknown	2.1	2 - 30	400 125	AN/ARC-102	2292/698 1281/390	229/70 128/39
CH-53 UH-1N	437S-1H	Unknown	2.1	30 - 32 >32 - 76	10	AN/ARC-114A	362/110 146/45	19/6 18/5
KC-130 CH-53	437S-1H	Unknown	2.1	30 - 32 >32 - 76	10	AN/ARC-131	362/110 146/45	19/6 18/5
KC-130 CH-53 UH-1N	437S-1H	Unknown	2.1	225 - 400	40	AN/ARC-159	43/13	10/3
F/A-18 AV-8B AH-1, UH-1N, CH-53	AS-4129/ARC	Unknown	2.1	30 - 32 >32 - 87.975 108-155.975 156-173.975 225 - 400	10	AN/ARC-182(V)	362/110 146/45 45/14 31/9 22/7	19/6 18/5 10/3 10/3 10/3
KC-130	AS-3191/A AS-3192/A AS-3193/A	Unknown	2.1	30 - 32 >32-87.975 108 - 156 136 - 174 225 - 400	23	AN/ARC-210(V)	550/167 222/68 68/21 54/16 33/10	29/9 27/8 13/4 12/4 10/3

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TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

MWCS	AS-3900/VRC	Dipole	-1	-30 - 32 >32 - 76	4	AN/MRC-145	180/55 73/22	10/3 10/3
MWCS	AS-368/PRC	Whip	2.1	-30 - 32 -32 - 76	4	AN/PRC-119	229/70 93/28	12/4 11/3
MWCS	AT-1011/U	Whip	2.1	-2 - 30	100	AN/MRC-138	1146/349	115/35
MWCS	Unknown	Whip	2.1	-116 - 150 225 - 400	2	AN/PRC-113(V)3	19/6 10/3	10/3 10/3

ENCLOSURE

Enclosure (5) lists transmitter locations and emission parameters. Enclosure (6) is the Map Plot of HERO Unsafe Areas on Board MCAS Miramar.

(2) As applicable, notify contractors who have mobile transmitters that transmission during HERO UNSAFE/SUSCEPTIBLE conditions is prohibited and ensure they are familiar with the various HERO UNSAFE areas.

e. Squadron commanders shall:

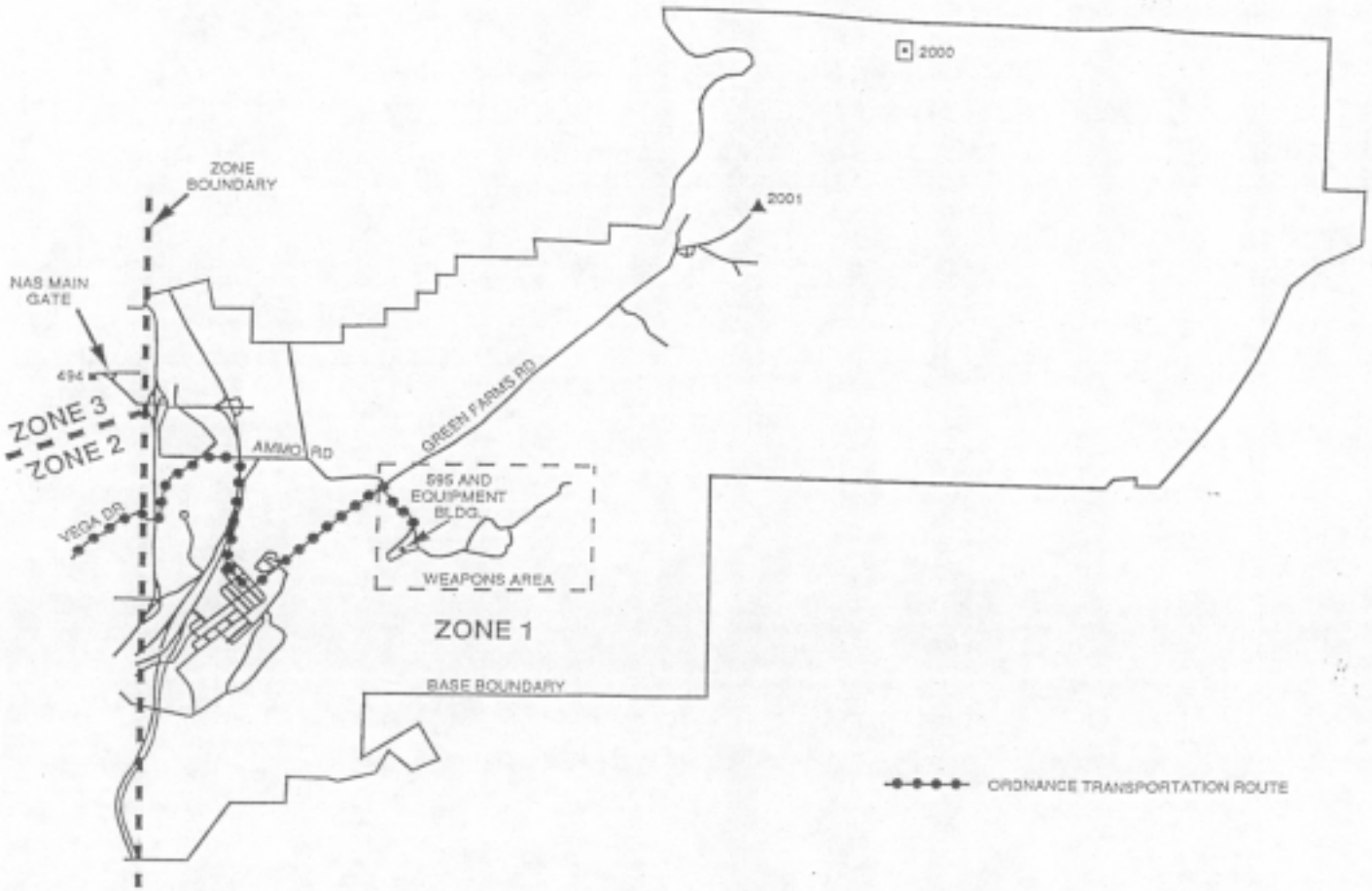
(1) Request the MCAS Miramar Operations Officer/Duty Officer have applicable HERO conditions set before handling, loading, or unloading HERO UNSAFE/SUSCEPTIBLE ordnance, including those components of the F-14D, F/A-18 NACES ejection seats that are HERO SUSCEPTIBLE.

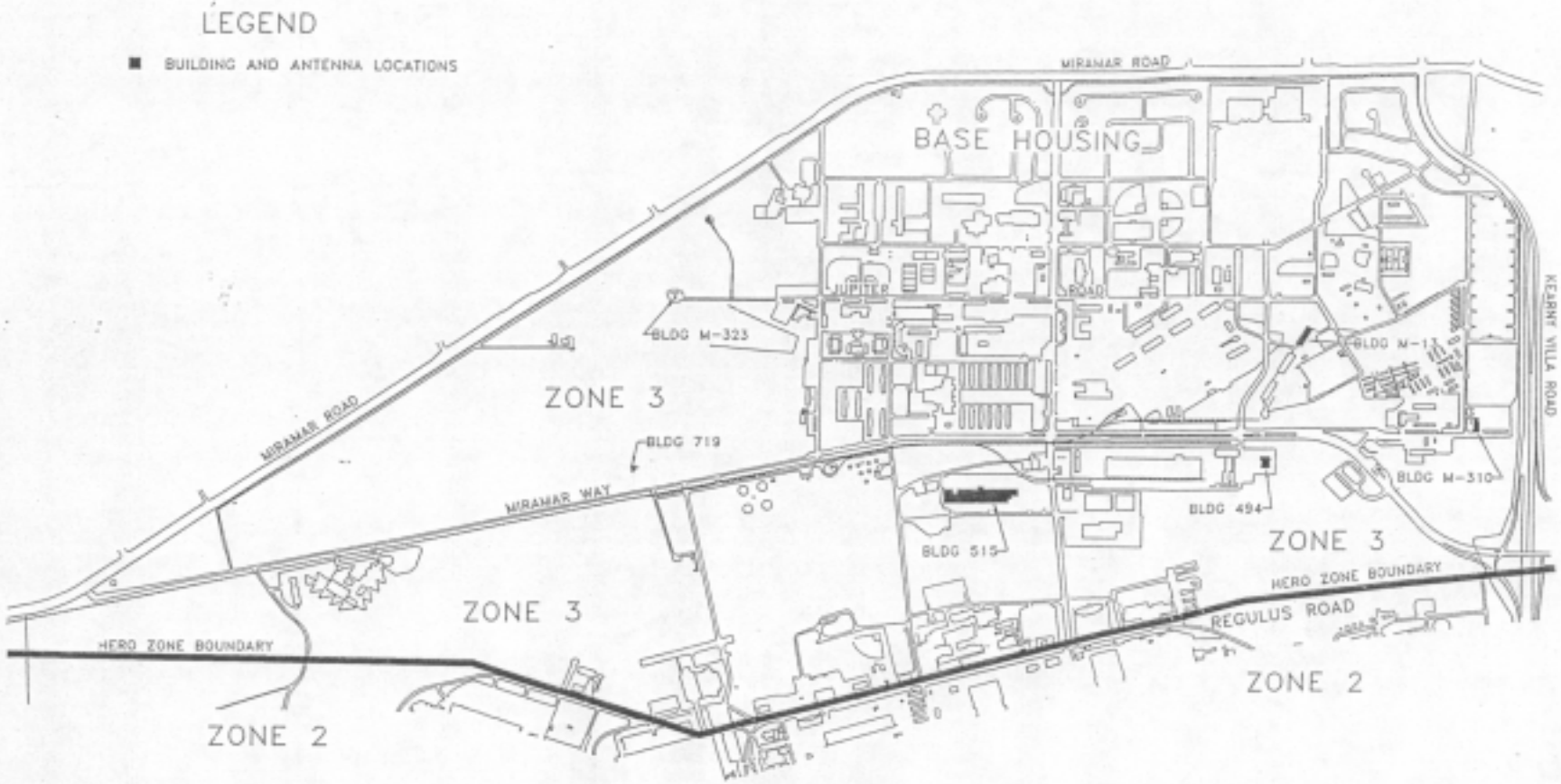
(2) Ensure applicable maintenance personnel are familiar with and follow the contents of reference (a).

7. Action. All cognizant personnel on board MCAS Miramar are directed to follow procedures of enclosure (2).

T. A. CAUGHLAN

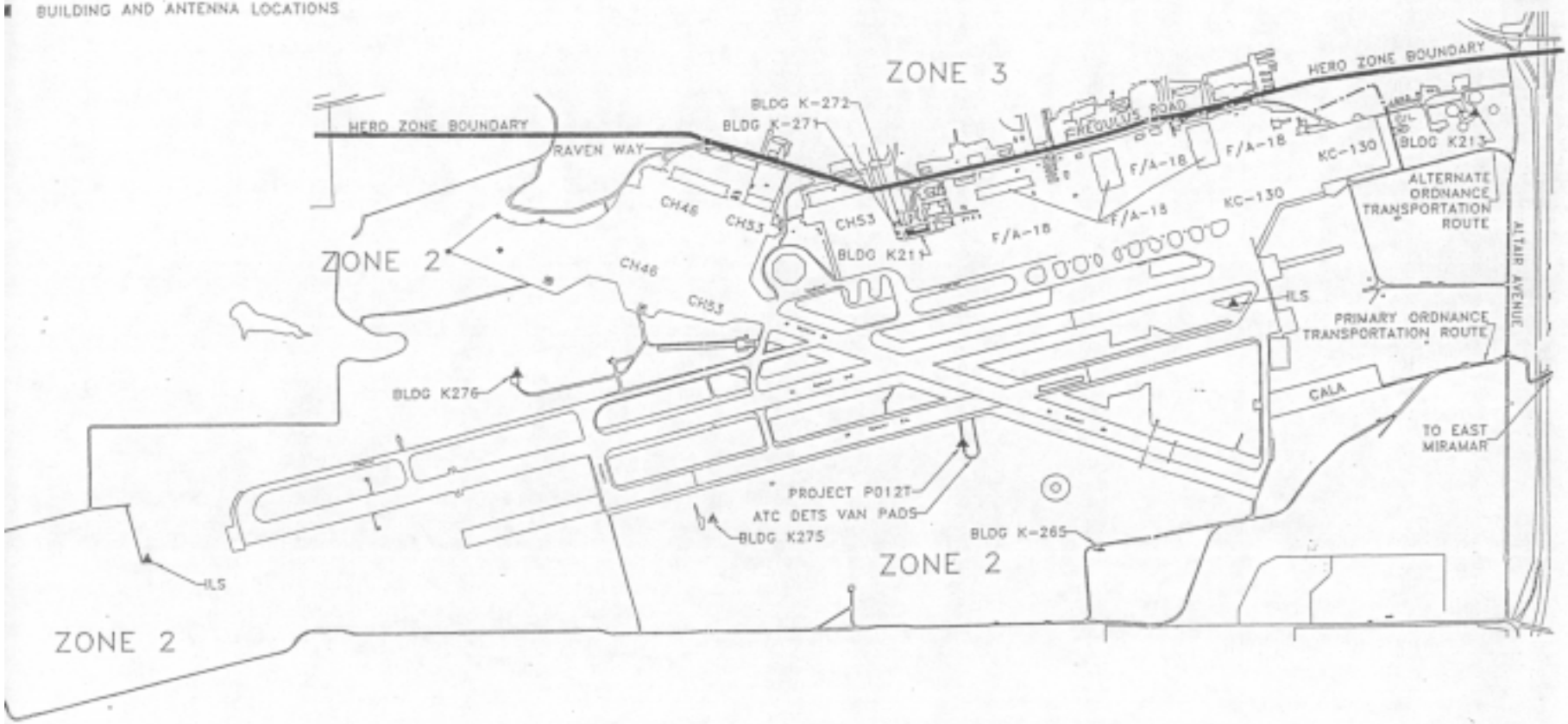
Distribution:
S-3 Operations Officer
S-4 Supply/Ordnance Officer
S-6 Electronics Officer
BRAC USMC Miramar
COMAEWINGPAC
FFD Miramar
3RD MAW MCAS Miramar
Marine Air Group 11
Marine Air Group 16
Marine Air Group 46
Safety


ZONE BOUNDARY
NAS MAIN GATE
494
ZONE 3
ZONE 2
VEGA DR
AMMO RD
GREEN FARMS RD
595 AND EQUIPMENT BLDG.
WEAPONS AREA
ZONE 1
BASE BOUNDARY
2000
2001
ORDNANCE TRANSPORTATION ROUTE


LEGEND
BUILDING AND ANTENNA LOCATIONS
MIRAMAR ROAD
BASE HOUSING
JUPITER ROAD
BLDG M-323
ZONE 3
BLDG 719
MIRAMAR WAY
MIRAMAR ROAD
BLDG M-1
KEARNY VILLA ROAD
BLDG M-310
BLDG 494
BLDG 515
ZONE 3
HERO ZONE BOUNDARY
REGULUS ROAD
ZONE 3
HERO ZONE BOUNDARY
ZONE 2
ZONE 2

LEGEND

BUILDING AND ANTENNA LOCATIONS



TRANSMITTER LOCATIONS AND EMISSION PARAMETERS

Bldg. Location	Antenna Nomenclature	Antenna Type	Antenna Gain (dBi)	Transmitter Frequency (MHz)	Transmitter Avg. Pwr. (watts)	Transmitter Type	Separation Distance HERO UNSAFE ORDNANCE (FEET/METERS)	Separation Distance HERO SUSCEPTIBLE ORDNANCE (FEET/METERS)
Portables, Mobiles, and Hand-Held Radios								
N/A	N/A	Blade	2.1	225 - 400	20	AN/ARC-51A	30/9	10/3
N/A	N/A	Whip	2.1	225 - 400	1	AN/ARC-51A	30/9	10/3
N/A	AS-2147	Whip	2.1	225 - 400	3	AN/PRC-75	12/4	10/3
N/A	N/A	Whip	2.1	132 - 150	2.2	AN/PRC-94	10/3	10/3
N/A	N/A	Whip	2.1	150.8 - 174	35	AN/VRC-82	66/20	12/4
N/A	N/A	Whip	2.1	136 - 151	4	GEP5xHxx5	22/7	10/3
N/A	N/A	Whip	2.1	136 - 174	15	Mot D33CM	44/13	10/3
N/A	N/A	Stub	0.9	406 - 512	1.5	Mot H24BB	10/3	10/3
N/A	N/A	Stub	0.9	136 - 174	5	Mot H33BB	22/7	10/3
N/A	N/A	Stub	0.9	136 - 174	2	Mot H33SP	14/4	10/3
N/A	N/A	Stub	0.9	136 - 174	4	Mot H33SV	20/6	10/3
N/A	N/A	Stub	0.9	403 - 512	5	Mot H44SS	10/3	10/3
N/A	N/A	Whip	2.1	136 - 174	45	Mot T43RT	75/23	16/5
N/A	N/A	Whip	2.1	406 - 512	50	Mot T44SR	27/8	10/3
N/A	N/A	Whip	2.1	136 - 174	110	Mot T83JJ	118/36	25/8
N/A	N/A	Whip	2.1	26 - 27	5	Citizens Band Radio	255/78	13/4
N/A	N/A	Whip	5.1	870 - 890	50	Cellular Phone	19/6	10/3
N/A	N/A	Whip	2.1	406 - 420	40	Astro Digital	24/7	10/3
N/A	N/A	Stub	0.9	406 - 420	5	Astro Digital	22/7	10/3
N/A	N/A	Stub	0.9	150	6	Astro Digital	10/3	10/3