Avalon Station DCS

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Background

Avalon is located on Catalina Island, which is 22 miles long and up to 8 miles wide, with the highest point at 2097 feet. The island population in 2010 was 4,096, and 90% of these live in the only incorporated City of Avalon. The Island is 22 miles Southwest of LA.

In May 2007, Catalina experienced the [2007 Avalon Fire](). Largely due to the assistance of 200 Los Angeles County fire fighters transported by U.S. Marine Corps helicopters and U.S Navy hovercraft, only a few structures were destroyed, yet 4750 acres of wildland burned. This fire disrupted both landline telephones and cellular service. Following this fire there was a great concern about emergency communications on the island. Gordon West travelled to the island to teach ham classes. There are now about 64 hams living on the island, but most are not technically savvy. There are only two known HF stations on the island.

In May 2011, another wildfire started near the Isthmus Yacht Club and was fought by 120 firefighters transported by barge from Los Angeles. It was extinguished the next day after burning 117 acres.

Avalon Station

During my visit on 2/12/2015, DCO Glen Gustafson met me at the boat terminal and drove me around. We also met with a couple of other local DCS members, and I was shown the Avalon Hospital ham communications setup.

Avalon Station is a very small station, and DCS has been relegated to a shelf on one wall of the station gym. There is a copier in front of the shelf. We are told that in the event of a major emergency, the copier could be moved. (It is on wheels and uses only 117v). Behind the copier there is a hinged fold out board that can be used as a desk. During drills and nets, an operator stands and places a piece of cardboard on top of the copier as a writing surface. Use of the gym has occasionally caused problems when officers using the gym want to have their music blaring while DCS is trying to check into a net.

There has been some talk of moving the operating position to another room down the hall. This room is about 12x12 feet, and is also used for interrogation and would be the emergency operating center in a disaster. However, due to the room's small size and use as an EOC, noise problems would probably make use of radios much more difficult in this room during a major disaster.

The current antennas are believed to be on the tower in front of the station. There is also an outside equipment area immediately above the radio room where antennas could be mounted. (This is accessed by ladder and hatch in upstairs men's restroom.) There were signs of previous antennas being mounted here, but it was not clear how the cables entered the building. There are hot water solar panels overhead. Avoid shadows from antennas on the solar panels, considering year round sun directions.

Equipment

Avalon DCS currently only has one Yeasu FT 8900R set up and operational. This radio is connected to an antenna which has a good SWR of 1.2:1 on 220MHz, but only 2:1 on 2m and 440.

Several additional 2m and 220 radios are new in boxes on site. These need to be installed and made fully functional.

Significant Issues

Isolation. Most services and supplies must come by boat from the mainland. It is not possible to run to the local Ham Radio Outlet, or even to a Radio Shack. So it is particularly important that we have all potentially needed capabilities set up and routinely tested in advance.

This isolation also makes it very difficult for local hams to even attend any additional ham training , DCS courses, or other events. It costs them about $200 per person to attend a meeting on the mainland, including boat fares, car rental, and a hotel overnight. It also makes it difficult for them to put on their own team-building events or local exercises, since they never attend any to learn what to do. They could use some help from us in this area, such as video streaming of classes or occasionally sending a trainer to the island.

During a recent DCS drill, Avalon DCS tried to participate. But since the City of Avalon was not participating, the only thing they were able to do was check in and check out. Future drills should consider adding activities or canned scripts for stations without participating cities, to allow them practice passing messages.

Terrain. Catalina Island has many hills blocking communications. The Catalina Repeater Association (CRA) has placed a repeater at the airport, which is about the center of the island at a relatively high elevation. This repeater is used extensively by people on the mainland, and their user group meetings are held on the mainland, so it is difficult for Catalina residents to attend. But this repeater cannot be heard in most of Avalon or Two Harbors, which are the most populated parts of the island. The CRA has placed additional small repeaters in both Avalon and Two Harbors which are linked to the repeater at the airport. However they have removed the capability for DCS to unlink the Avalon repeater for local events.

There have been times when the CRA has taken one of the repeaters out of service for months at a time, without prior notice. DCS should explore usage agreements with nearby mainland repeaters for backup during an emergency. However the closest ones are over 20 miles away and while they may cover much of the island, they may be difficult to use with handhelds in many locations.

Morale: Since 2007 when many residents became hams, there has been no additional training. Most hams no longer use ham radio on a regular basis. This was apparently exacerbated by one repeater user who hogs their primary island repeater and makes it unpleasant for other users. Additional local training might help alleviate this problem and re-invigorate the group.

Frequencies

The following table shows the frequencies used at Avalon

Chan.	Receive Freq.	Op Mode	RPT Shift	RPT Offset	Xmit Freq.	Encoding Method	CTCSS Tone	Show Name	Memory Name	Xmit Power	Scan Skip	Tuning Step	Mem. Desc.
1	448.4000	FM	Minus	5		TSQL	110.9	Name	AVALON	HIGH LOW	Pref	25.0 K	Avalon 440 Rpt
2	147.5550	FM	Simplex	0.6		OFF	100	Name	CATCOM	HIGH	Skip	5.0 K	SCI Emerg. Splx.
3	144.3300	FM	Simplex	0.6		OFF	100	Name	GORDOS	HIGH	Skip	5.0 K	Gordo Local Splx.
4	147.0900	FM	Plus	0.6		TONE	79.7	Name	AIRPRT	HIGH	Skip	5.0 K	CARA 2m Rpt
5	145.2200	FM	Minus	0.6		TONE	103.5	Name	CLARA	HIGH	Skip	5.0 K	CLARA Rpt
6	147.3600	FM	Plus	0.6		TONE	103.5	Name	ARES 1	HIGH	Skip	5.0 K	Red Cross Rpt 1
7	N/A												
8	145.5200	FM	Simplex	0.6		OFF	100	Name	ARESIM	HIGH	Skip	5.0 K	Red Cross Splx.
9	449.7800	FM	Minus	5		TONE	131.8	Name	SIGHIL	HIGH	Skip	25.0 K	Signal Hill Rpt
10	146.5200	FM	Simplex	0.6		OFF	100	Name	NATSIM	HIGH	Skip	5.0 K	National Splx.
11	147.2100	FM	Plus	0.6		TONE	77	Name	WINSUN	HIGH	Skip	5.0 K	WinSys
12	146.9250	FM	Minus	0.6		TONE	114.8	Name	BALDWN	HIGH	Skip	5.0 K	Baldwin Hills Rpt
13	147.2250	FM	Plus	0.6		TONE	94.8	Name	CASTRO	HIGH	Skip	5.0 K	Castroville Rpt
14	147.4650	FM	Split	0.6	146.505	TONE	103.5	Name	HUNBCH	HIGH	Skip	5.0 K	Hun.Bch. Rpt
15	145.3000	FM	Minus	0.6		TONE	100	Name	DCSMTD	HIGH	Skip	5.0 K	DCS Mt. D Rpt
16	145.3000	FM	Minus	0.6		TONE	156.7	Name	DCSEOB	HIGH	Skip	5.0 K	DCS EOB Rpt
17	147.2250	FM	Plus	0.6		TONE	94.8	Name	DCS K6	HIGH	Skip	5.0 K	K6DCS Rpt
18	147.2700	FM	Plus	0.6		TONE	100	Name	DCSZTR	HIGH	Off	5.0 K	WA6ZTR Rpt
19	145.2600	FM	Minus	0.6		TONE	100	Name	MALIBU	HIGH	Skip	5.0 K	Malibu Rpt
20	147.0750	FM	Plus	0.6		TONE	107.2	Name	PALMAR	HIGH	Skip	5.0 K	Palomar Mtn. Rpt
21	146.0250	FM	Plus	0.6		TONE	110.9	Name	SANCLM	HIGH	Skip	5.0 K	San Clemente Rpt
22	146.6400	FM	Minus	0.6		TONE	107.2	Name	SDIEGO	HIGH	Skip	5.0 K	San Diego Rpt
23	145.3200	FM	Minus	0.6		TONE	114.8	Name	TRW	HIGH	Off	5.0 K	TRW Rpt
24	N/A												
25	N/A												
26	162.5250	FM	Simplex	0.6		OFF	100	Name	WX CH7	HIGH	Pref	5.0 K	Avalon WX Stn
27	450.7000	FM	Simplex	5		OFF	100	Name	KNX AM	HIGH	Skip	25.0 K	KNX Radio
28	450.7250	FM	Simplex	5		OFF	100	Name	KFI AM	HIGH	Skip	25.0 K	KFI Radio
29	156.8000	FM	Simplex	0.6		OFF	100	Name	MARINE	HIGH	Off	5.0 K	Marine Ch. 16
30	151.1450	FM	Simplex	0.6		OFF	107.2	Name	CONSRV	HIGH	Off	5.0 K	Cat. Conservancy
31	154.6000	FM	Simplex	0.6		OFF	100	Name	SCHOOL	HIGH	Off	5.0 K	Avalon School
32	482.8875	FM	Simplex	5		OFF	100	Name	LASD	HIGH	Off	25.0 K	LASD: L-Tac 2
41	446.860		MINUS	5			151.4		N6SCI	MED			

Per Catalina Repeater Association website:

147.090 MHz + No PL

224.420 MHz - PL 110.9

927.9375 MHz -(25MHz)   DPL 311

Avalon Repeater 448.400 MHz - PL 110.9 Local repeater, works only in Avalon. Talk all over Avalon with just a low-power handheld! Linked to 147.090

One other person has placed a small repeater in Avalon on the test pair (446.86 Minus 151.8). The DCO generally monitors this repeater, due to excessive chatter on the CRA repeaters.

Recommendations

- Extend the shelf across to allow space for more radios.
- Install new equipment
    - Move existing 2m / 440 to a **new** 2m / 440 antenna and **new** coax

- Install existing Alinco radio on existing 220 antenna
- Install existing CDM 1550 on **new** 2 meter antenna
- Install **new** 160-6m HF radio on a **new** Horizontal HF antenna for NVIS aimed at SCC
- Set up remaining existing 2m/440 radios in a **new** portable package (Pelican Case) with **new** vehicle power connectors and/or batteries and **new** antennas to be used for hard to reach locations or cross-band repeaters to cover additional terrain.
- Send a trainer to the island to provide training on how to use the new equipment, message handling and other topics. Invite all licensed hams on the island, since they may be our only available resource.
- Begin streaming and recording mainland trainings for use by members that cannot attend.
- Train Island staff how to talk on the repeater output to request a relay during nets.
- Provide support to Island personnel to set up a yearly communications drill on the Island.
- Help identify and develop MOU with mainland repeater(s) that could back up the CRA systems.