



System Overview & Technical Capabilities

Diver6 System Components



What Is Diver6?

Diver6 is a Diver and Dive Operations mobile support system. This ADVISORY system allows dive masters to monitor and accurately track divers beneath the surface for greater situational awareness.



Features



- Tracking and monitoring divers in water up to 1000m & 100m depth
- Providing Situational Awareness (SA) on divers in the water
- Logging a diver's aqua-spatial information for analysis
- Diver Recall and Assist features
- 2D and 3D views of divers in the water
- Customizable diver alarm conditions
- Intuitive touch screen application for quick dive plan setup, operation, tracking and monitoring
- Round-robin updates approximately 3 seconds per diver

Why Acoustic Modems?

- Underwater Acoustic Modems use sound to transfer information through the water.
- Sound (Acoustic Energy), especially at Low Frequencies, can travel significant distances through water. (1500 meters per second)
- They are NOT LTE, or 4G, or 3G
- Bi-Directional Half Duplex – Only one direction at a time
- Serial data is passed into the modem, processed, converted to acoustic energy, and broadcast into the water.
- A receiving modem collects this acoustic signal, processes it, and passes it out through a serial link.

Components: Topside Modem



- Acoustic Range - 1km radius horizontal, 1km vertical
- Range Resolution - $\pm 50\text{mm}$ (dependent on VOS accuracy)
- Angular Resolution - $\pm 1^\circ$
- Velocity-of-Sound Range - 1300 m/s to 1700 m/s
- Beacon Velocity - Active Doppler compensation, up to 15kts (28kph)
- Communications- Broadband spread spectrum encoding, 24-32kHz (C-Band), 100 baud. Multi-tiered Acoustic Protocol Stack.
- Packet Addressing - 15 unique beacon identifiers, and broadcast to all capability.
- Transmit Sound Pressure Level - $\sim 172\text{dB}$ re 1uPa @ 1m
- Power Consumption- Less than 10W when transmitting, approx 0.5W when idle
- Integrated Sensors - Pressure, Temperature, 9-DOF, Supply Voltage Monitor
- Indicators - Red/Green visual status LED

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Tablet

- COTS Tablet
- Meets or exceeds MIL-STD-810G Certified and IP65 rating
- Dust Proof and Fully Submersible Operating Temps: -4°F to 95°F (-20°C to 35°C)
- Submeter GPS
- Touch Screen and Stylus
- 10.5 inch screen

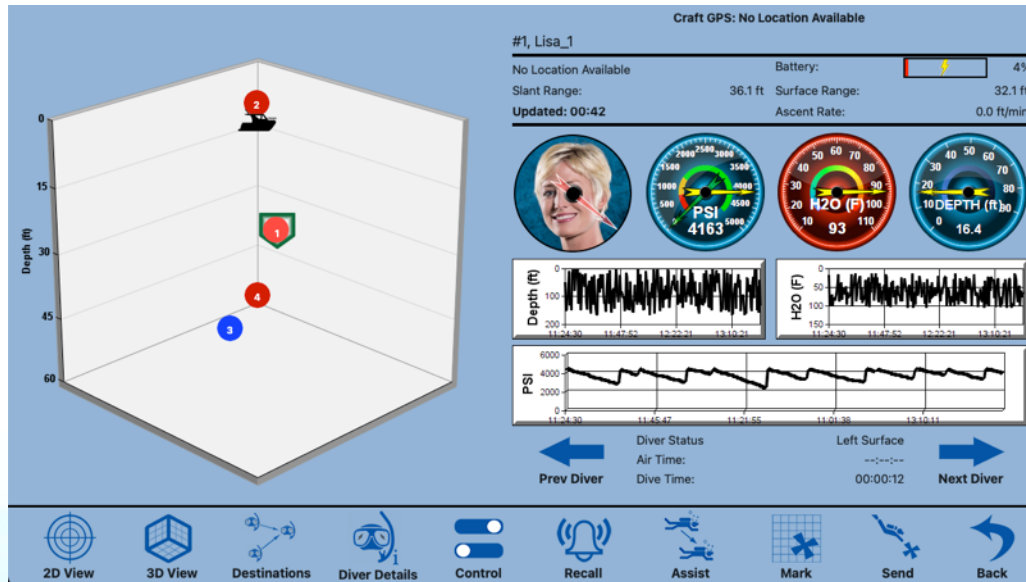


Topside Battery Unit

- Topside Battery Unit
 - BA 5590 Military Battery
- NiMH battery chemistry
- Wireless or wired data connection from the Topside Modem to the Tablet
- Bluetooth Class 1 (up to 100m distance)



Diver6 Software

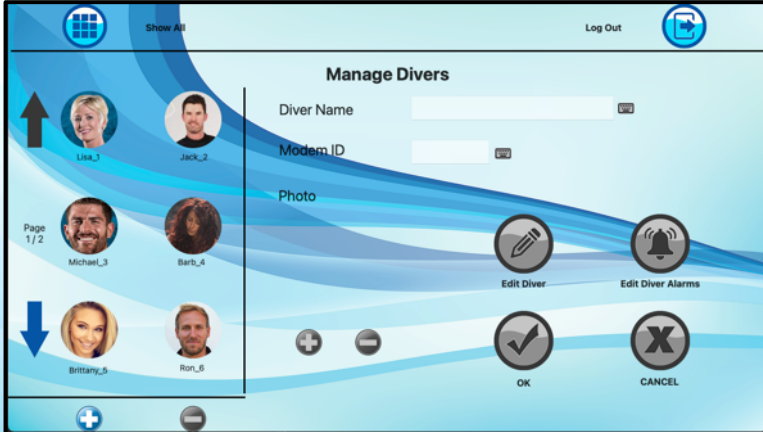
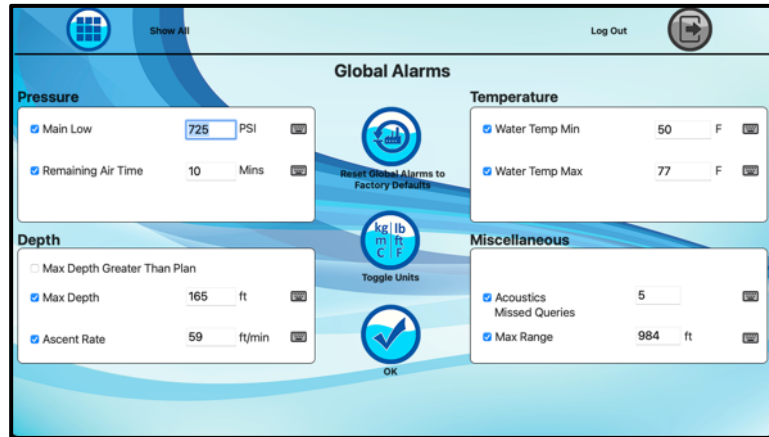


- Intuitive, simple interface
- Touch screen, large icons
- Multiple views of diver information
- Global and Diver Alarms
- Windows, Mac, Linux ready

Software Features

- **Diver Vitals** – Air Pressure, Water Temperature
- **Diver Location** – Range, Bearing, Depth, GPS
- **Diver Recall** – Recall Diver to the surface with directional information
- **Diver Assist** – Direct a diver to assist another diver with directional information
- **Diver Send** – Direct a diver to a specific GPS location
- **Diver Distress** – Diver transmits a message to surface requesting assistance.
- **Return Home** – Diver asks for directions to surface vessel.

Software Features



- Logging – Diver data, produces dive records and reports, compiled for post-mission analysis
- Export Data – GPX, CSV, RAW
- Broadcasting
- Alarms to notify supervisors
- Electronic Decompression Tables
- Divers and Supervisors profile database

HDG (M): 012



Total Range: 68.0 ft

Each Ring: 17.0 ft

Craft GPS: No Location Available

#1, Frank C

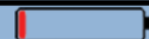
No Location Available

Slant Range:

68.9 ft

Updated: 00:35

Battery:

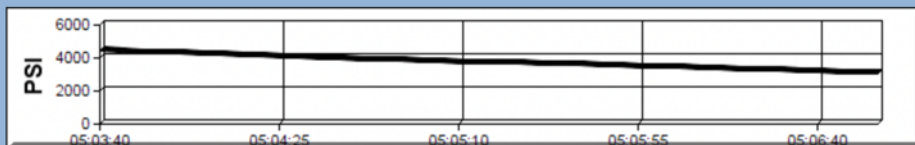
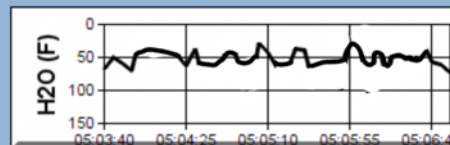
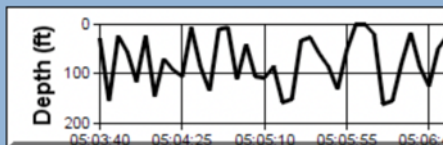


Surface Range:

63.7 ft

Ascent Rate:

0.0 ft/min



Prev Diver

Status:

Air Time:

Dive Time:

On Surface

--:--:--

00:00:04



Next Diver



2D View



3D View



Destinations



Diver Details



Control



Recall



Assist



Mark



Send



Back

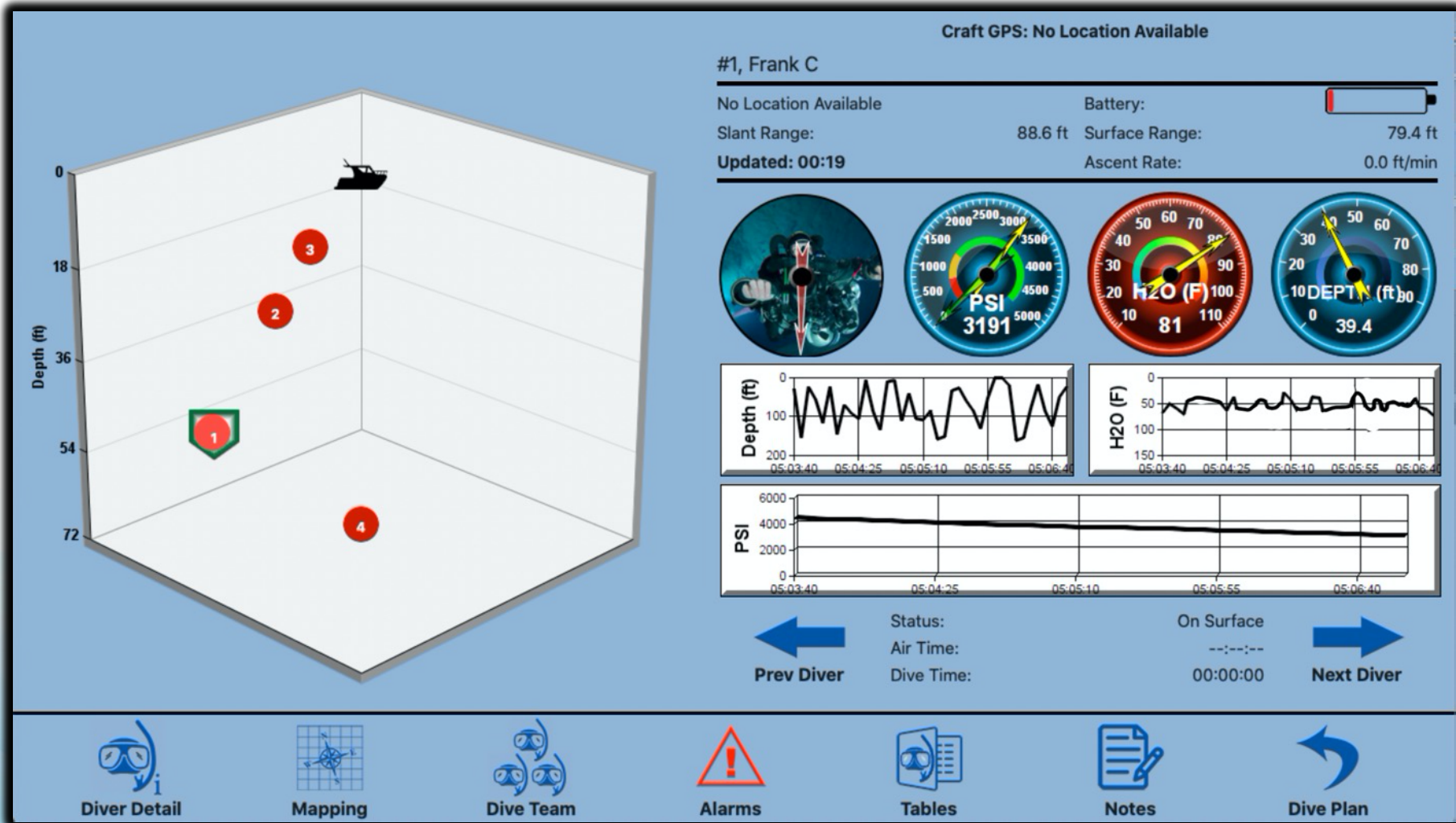
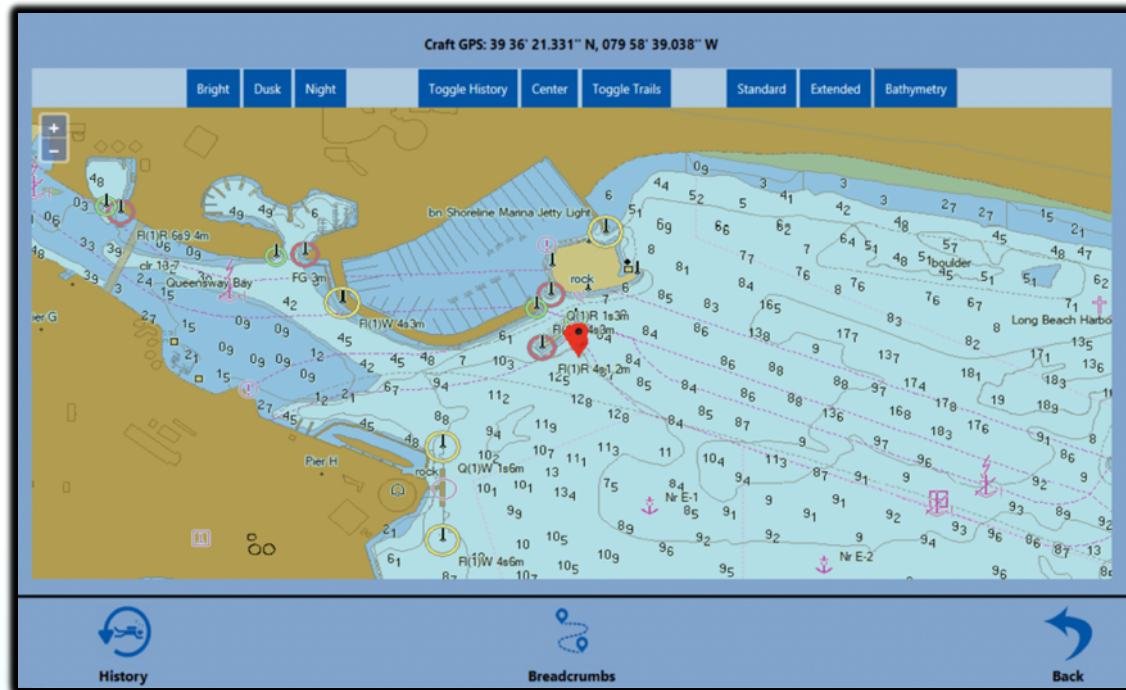


CHART VIEW

- Support for NOAA ENC Charts
- INTL S-63 charts
- Layers of Detail
- Brightness Option
- On Tablet Chart Server
- **NO INTERNET CONNECTION NEEDED.**
- Pop-up diver and surface vessel details



Craft GPS: 39 36' 21.331" N, 079 58' 39.038" W

Bright

Dusk

Night

Toggle History

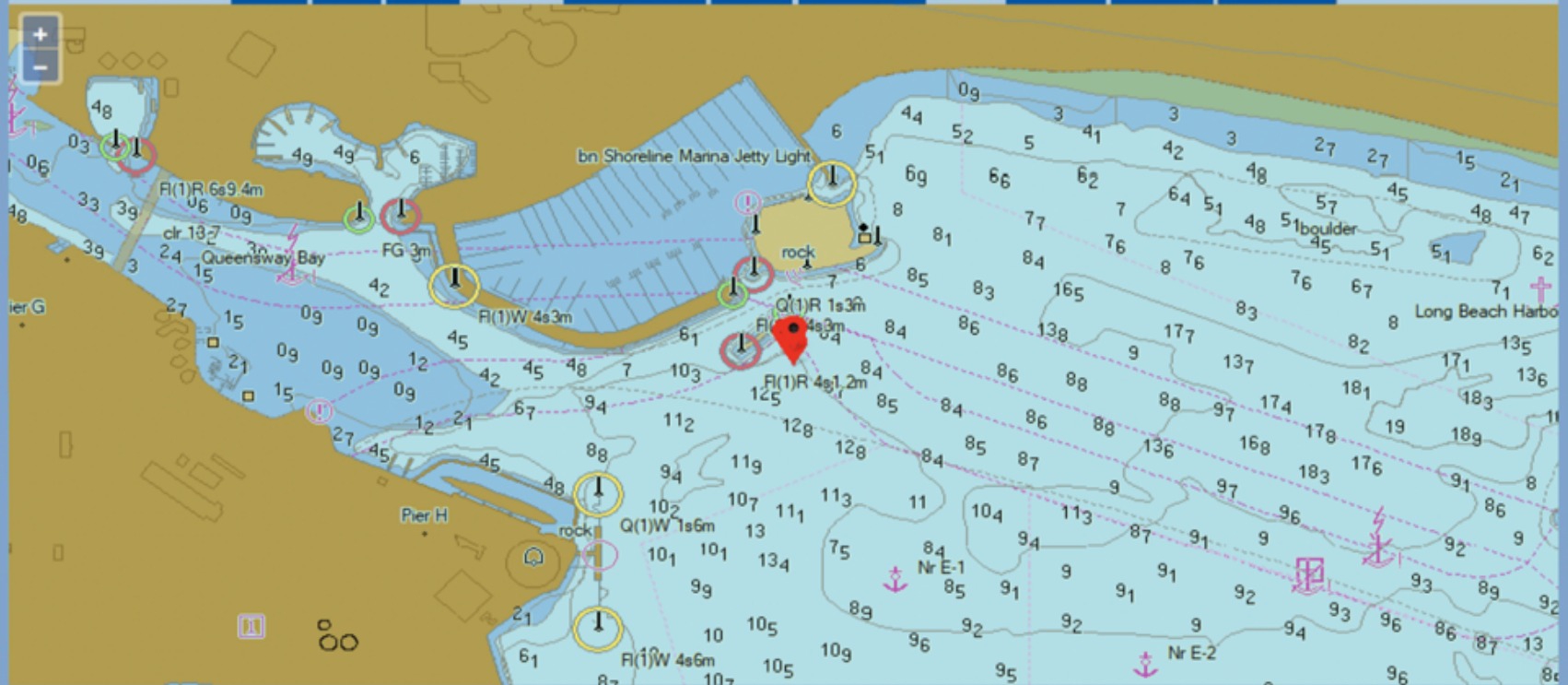
Center

Toggle Trails

Standard

Extended

Bathymetry



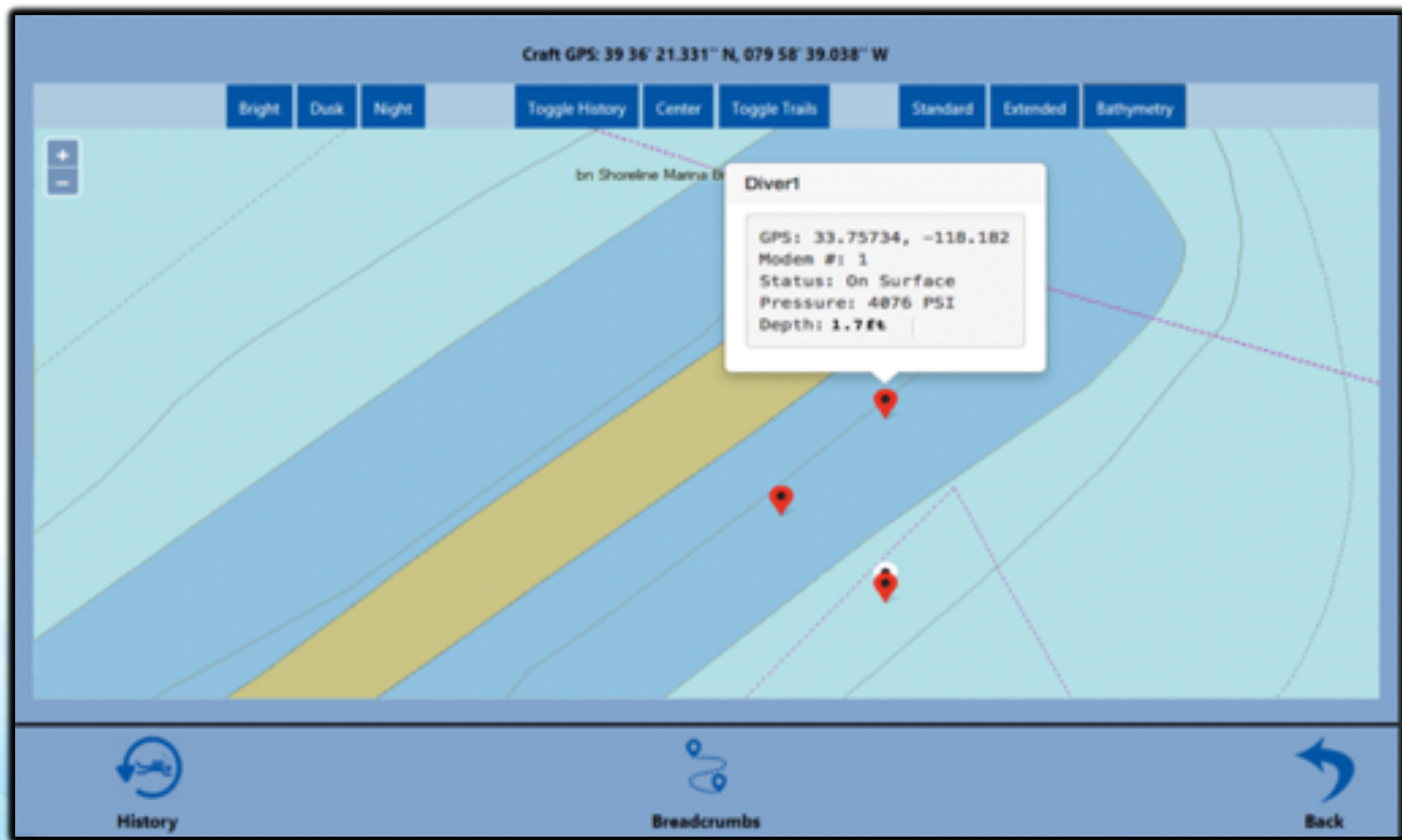
History















Breadcrumbs





Back





John Smith	Frank C	Jenny Jones	Craig Johnson		
 <div>2</div> 	 <div>1</div> 	 <div>4</div> 	 <div>3</div> 		
On Surface Pressure (PSI): 4119 Depth (ft): 3.3 Air Time: --:--:-- Ascent (ft/min): 0.0 Max Depth (ft): 3.3 Dive Time: 00:00:00	On Surface Pressure (PSI): 3278 Depth (ft): 0.0 Air Time: --:--:-- Ascent (ft/min): 0.0 Max Depth (ft): 0.0 Dive Time: 00:00:00	Left Surface Pressure (PSI): 2567 Depth (ft): 29.5 Air Time: --:--:-- Ascent (ft/min): 0.0 Max Depth (ft): 29.5 Dive Time: 00:07:37	Left Surface Pressure (PSI): 2756 Depth (ft): 62.3 Air Time: --:--:-- Ascent (ft/min): 0.0 Max Depth (ft): 62.3 Dive Time: 00:07:37		
Bearing: --- Battery: ---% Tank A (PSI): --- Tank B (PSI): --- NDL (min): --- Stop Depth (ft): --- Stop Time (min): --- Rebreather (ata): ---	Bearing: --- Battery: ---% Tank A (PSI): --- Tank B (PSI): --- NDL (min): --- Stop Depth (ft): --- Stop Time (min): --- Rebreather (ata): ---	Bearing: --- Battery: ---% Tank A (PSI): 3162 Tank B (PSI): 1320 NDL (min): --- Stop Depth (ft): --- Stop Time (min): --- Rebreather (ata): ---	Bearing: --- Battery: ---% Tank A (PSI): --- Tank B (PSI): --- NDL (min): --- Stop Depth (ft): --- Stop Time (min): --- Rebreather (ata): ---		
					
Updated: 02:16	Updated: 02:16	Updated: 02:16	Updated: 02:16		


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 Diver Detail



 Mapping






 Dive Team


 Alarms



 Tables



 Notes



 Dive Plan


#2 John Smith	#1 Frank C	#4 Jenny Jones	#3 Craig Johnson
			
<input type="radio"/> Main Low	<input type="radio"/> Main Low	<input type="radio"/> Main Low	<input type="radio"/> Main Low
<input type="radio"/> Remaining Air Time	<input type="radio"/> Remaining Air Time	<input type="radio"/> Remaining Air Time	<input type="radio"/> Remaining Air Time
<input type="radio"/> Max Depth	<input type="radio"/> Max Depth	<input type="radio"/> Max Depth	<input type="radio"/> Max Depth
<input type="radio"/> Ascent Rate	<input type="radio"/> Ascent Rate	<input type="radio"/> Ascent Rate	<input type="radio"/> Ascent Rate
<input type="radio"/> Depth Greater Than Plan	<input type="radio"/> Depth Greater Than Plan	<input type="radio"/> Depth Greater Than Plan	<input type="radio"/> Depth Greater Than Plan
<input type="radio"/> Water Temp Min	<input type="radio"/> Water Temp Min	<input checked="" type="radio"/> Water Temp Min	<input type="radio"/> Water Temp Min
<input type="radio"/> Water Temp Max	<input checked="" type="radio"/> Water Temp Max	<input type="radio"/> Water Temp Max	<input checked="" type="radio"/> Water Temp Max
<input type="radio"/> Max Range	<input type="radio"/> Max Range	<input type="radio"/> Max Range	<input type="radio"/> Max Range
<input type="radio"/> Acoustic Comms	<input type="radio"/> Acoustic Comms	<input type="radio"/> Acoustic Comms	<input type="radio"/> Acoustic Comms


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Diver Detail



Mapping


Dive Team


Alarms


Tables


Notes


Dive Plan

US Navy Tables (Dec 2016, Revision 7)

NDL and RG Designators for No-Deco Air Dives

Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	56	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102
30	371	17	27	38	50	62	76	91	107	125	145	167	193	225	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					



US Navy



NOAA



PADI



Bühlmann



DCIEM



Back



Dive Record

de fazio

Wednesday, May 24, 2017



Dive Details

Dive Name

Location

Description

Dive Time

Start Pressure

End Pressure

Max Depth

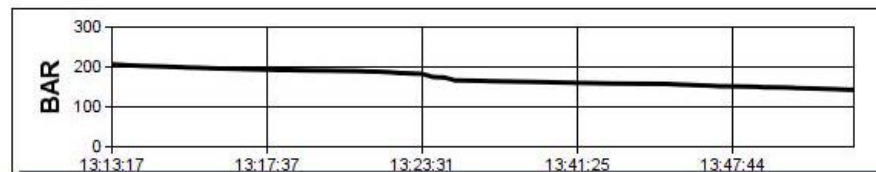
Temp Min

Temp Max

Left Surface

Reached Surface

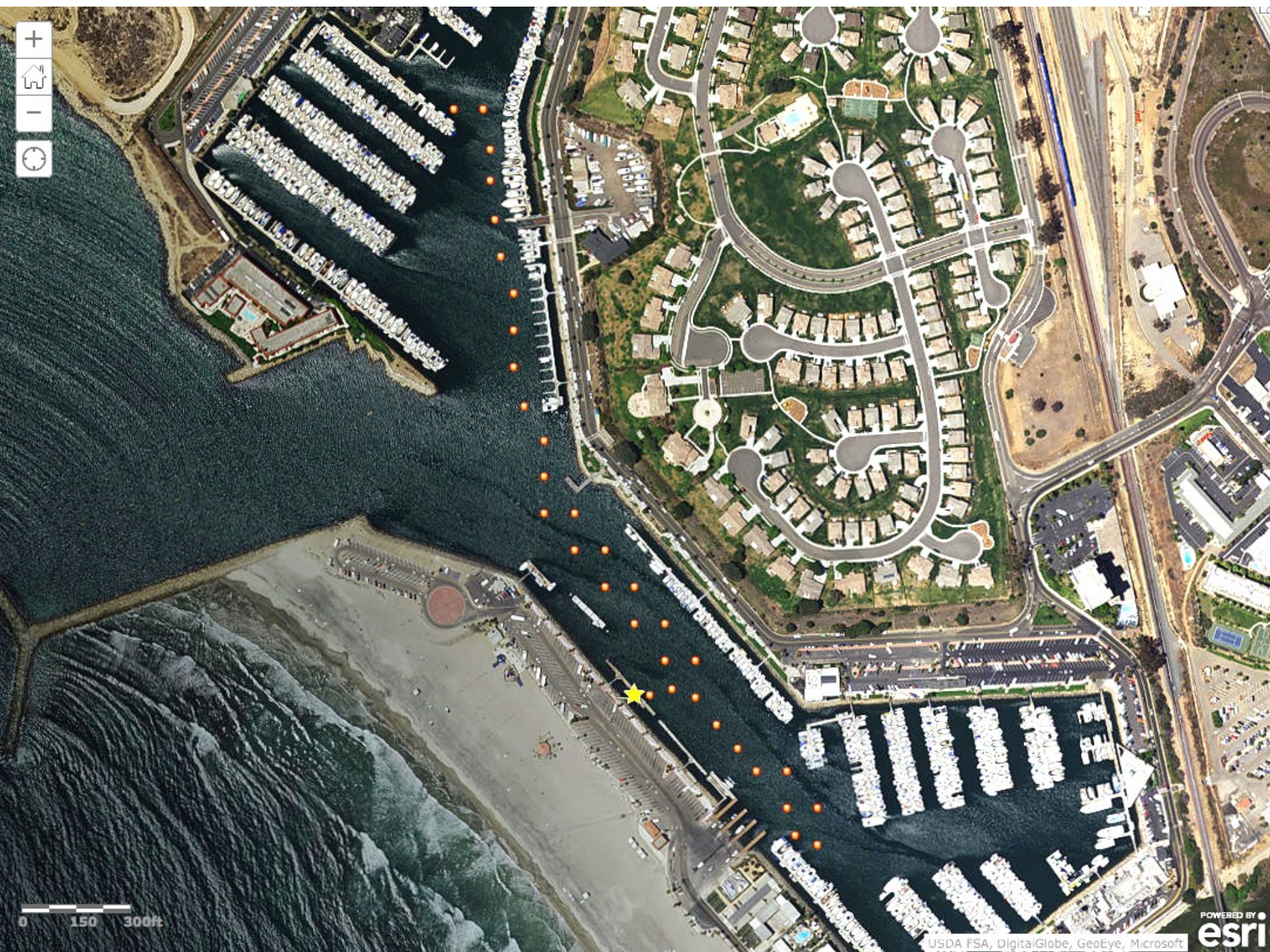
Dive Profile



Divemaster



0 150 300ft



USDA FSA, DigitalGlobe, GeoEye, Microsoft

POWERED BY
esri



SHEARWATER



- Shearwater Research Integration
- PETREL, NERD & Pressure Sensors
- DiveCAN® interface
- Provide navigation information
- Receive and Send Communication (Recall, Assist, Send, Distress)



- Diver6 / Shearwater Firmware Options
 - Shearwater + Diver6
 - Fully functional Shearwater product with Diver6 navigation tools
 - Diver6 - Aid to Navigation (ATN)
 - A navigation tool for specific Diver6 functions



Questions?

For More Information
www.diver6.com