EQUIPMENT LEASING NEWSLETTER

SPRING 2012

Wave Measurement

Current Measurement

Ice Measurement

Sediment Transport

Fish Habitat Studies

Coastal Engineering

New additions to the lease pool:

Teledyne RD Instrument RiverRay. Versatile ADCP for discharge measurements in water depths of 0.4 to 40 meters. Comes with stable trimaran boat. Runs off WinRiver2 via Bluetooth, with GPS included. The RiverRay complements the StreamPro we already had, but extends discharge measurements into deeper, stronger flow conditions.

Teledyne RD Instrument Sentinel V20 & V50. The next generation ADCP with vertical beam, bottom-track, and WiFi communication.

ORE PORT-LF acoustic releases. The replacement for the CART releases. The PORTs have a push off drop link for a more positive release. We now have 13 PORTs and 12 CARTs.

ORE 8011M deck box. Longer cable and more capability than the AMD200r.

Another **Furuno SC-30 satellite compass**. These give you a true north heading as well as position.

ASD FieldSpec HandHeld2 spectrometer. Applications such as ice and water research, crop and soil, and ground-truthing satellite imagery.

MSI ellipsoid buoy. These offer a light weight, low drag option for ADCP moorings.

Stream Pro and River Ray:

There has been growing interest in stream/river flow measurements, for water resource as well as for run of the river type power projects. The StreamPro and RiverRay systems are meant for these measurements, but the Workhorse ADCPs with bottom-track can also be used. Our StreamPro and RiverRay were used by clients on various projects in 2011, including:

Northwest Hydraulic Consultants:
The RiverRay was recently used by Northwest Hydraulic Consultants Ltd. (NHC) to develop rating curves for hydrometric stations situated on large rivers in Northern British Columbia, Canada. While air temperatures reached -27 degrees Celsius (-17 degrees Fahrenheit) with ice forming on the RiverRay pontoon boat, the RiverRay proved its worth and performed without fail.

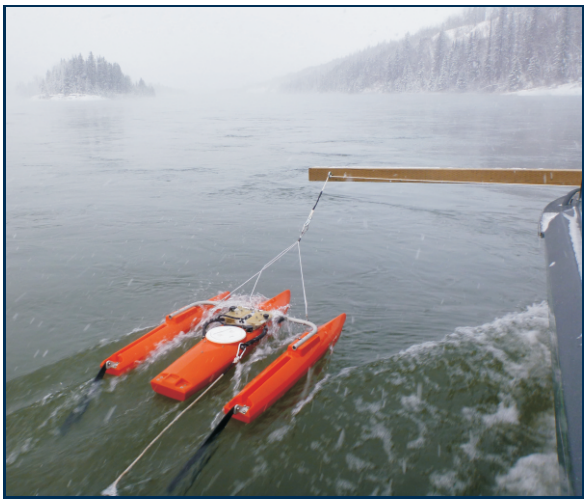

Photo Courtesy NHC

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Hydrovolts, Inc
Brian Peithman of Hydrovolts, Inc leased a StreamPro to measure accurate depth and velocity values while their hydrokinetic turbine was operating. These measurements were done in order to quantify the effect of the turbine on the canal.

Photo Courtesy Hydrovolts Inc

Lally Consulting LLC of Seattle, WA conducted an acoustic doppler current profiler (ADCP) survey on the Upper Columbia River during high free-flow conditions to acquire and calculate velocity profile and discharge (Q) data at pre-defined transect locations. Lally employed ASL's new Teledyne RDI RiverRay ADCP which features automatic, adaptive cell sizing and sampling rates, a 600 kHz low profile Phased Array transducer, improved bottom tracking performance over "moving bottom" and high sediment concentrations, and latest generation electronics for the accurate calculation of Q. The results of the ADCP transects, in conjunction with bathymetric survey data acquired during the same field program, are being used to support hydraulic modeling and sediment transport analyses on the Upper Columbia River study site.

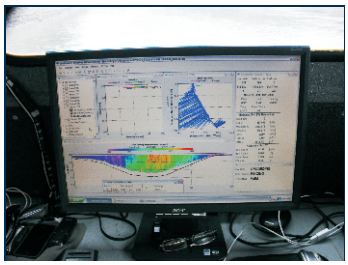


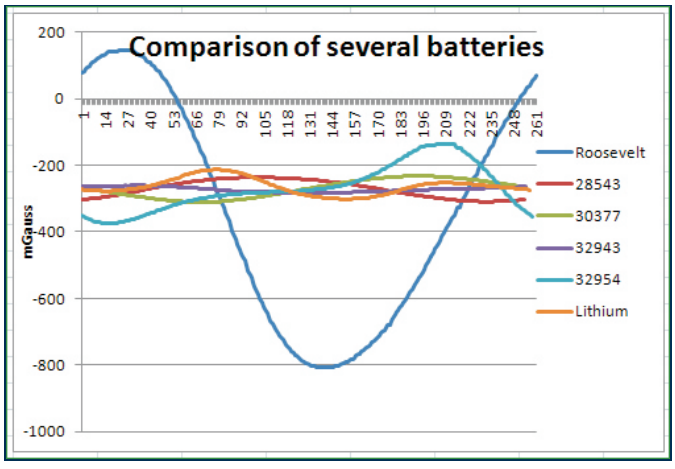
Photo Courtesy Lally Consultants

More new instruments:

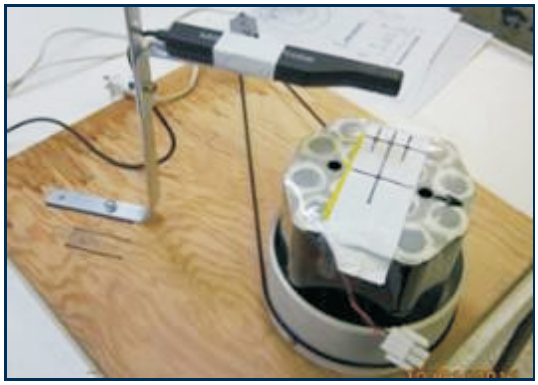
- **Teledyne RD Instrument ADCPs**: three more **LongRangers**, and three more **QuarterMasters**. More **DVS ADCPs** (now have four DVS750 & three DVS6000)
- **Flotation Technology M40 syntactic buoys** (six)
- **Novatech AS900A ARGOS beacons** (six), and **Novatech RF beacon flashers** (six)
- **RBR temperature loggers** (20)

Battery magnetism and effect on ADCP compass:

ASL recently had two instances where field staff could not calibrate the compass on a Teledyne RDI WH ADCP in the field. One instance at lower latitudes was due to a battery pack (BP) that had a large magnetic signature even though it had been de-gaussed at the factory. The other case was in the arctic where the horizontal component of the earth's magnetic field is much reduced.



A good illustration of the difference between normal batteries and the occasional 'ringer'.



We were using the new three BP WH cases and the gap between the BP and the compass was less than on a normal WH ADCP. This was enough to cause the compass to not calibrate. ASL now measures the magnetic signature of each battery pack and de-gausses those with excessive magnetism for the application planned. If you would like to learn more, call ASL and ask to speak to either Rick or Wally.