

## CEE-USV Surveying in the Arizona Desert

Under the July summer sun in Arizona, USA, equipment gets tested at the extremes and in this case that was a CEE-USV hydrographic survey boat with CEESCOPE-LITE echo sounder. In the middle of the day, the shore acquisition computer supplied with the system – a silver Panasonic Toughbook – got so hot that the handle could not be used to pick it up without a glove! Fortunately, the CEE-USV used at this site is fitted with high temperature features such as special fan cooled motors, that leads to trouble-free surveying even throughout the hottest part of the day where temperatures can exceed 110F (45C) – in the shade. Surveyors decided to conduct a survey of the site dam to help determine the water storage capacity of the reservoir. Access to the dam was poor, but the survey was completed from two shore locations – on the dam and from a high point overlooking most of the area.

The main shore control station was set up with a high viewing position – this shows the importance of maximizing elevation during USV surveys on all but the smallest areas, especially if the water surface boundary edge location is not known before the survey. From the shore, it would have been almost impossible to safely complete the survey.





Vegetation posed a hazard in this case, with overhanging branches, floating debris, and algae. With no means of recovery, the operators were careful to avoid trouble but were grateful on a couple of occasions that they had plenty of spare performance from the vehicle when driving through unseen vegetation.

After the dam survey was completed, the CEE-USV went back to its natural habitat at this site, surveying the tailings dam.

