

Using Underwater Speakers at ALPS Synchronized Swimming competitions

One of the most seemingly simple yet most challenging technical aspects to hosting an ALPS Synchro Swimming event is delivering the routine music underwater. There are a limited number of suppliers of underwater speaker technology and, by far the most popular among these in ALPS is Electro-Voice who supplies the UW30 underwater speaker.

By far the most common problem with these speakers is “blowing” or overloading them.

Overview

The UW30 speaker is designed as a low-power output device. It comes with a 50 meter cable and plugs into an amplifier like any other speaker. However, the UW30 is designed to accept a maximum of 30Watts of power. Since the setup of a synchro environment requires delivering music simultaneously to speakers above water and below water, this requires a special set up of sound equipment and a clear knowledge of how to connect these speakers.



Placement

The UW30 speaker is designed to service an area approximately 900 square feet (about 30' x 30') or 1200 square feet (30'x40'). This usually means that two underwater speakers are required to service a synchro competition - one placed in the shallow end, one in the deep end.

The UW30 is designed to be submerged no further than 3Meters (10 feet). Care must be taken not to submerge the speaker too deep. Some ALPS pools have deep ends over 15 feet deep. The speaker should, in this case, be suspended on the side of the pool at a depth of no more than 10 feet.

Since the standard cable on these speakers is 50Meters long, you must consider the placement of your sound table to ensure the table will be able to reach both speakers.

Fusing

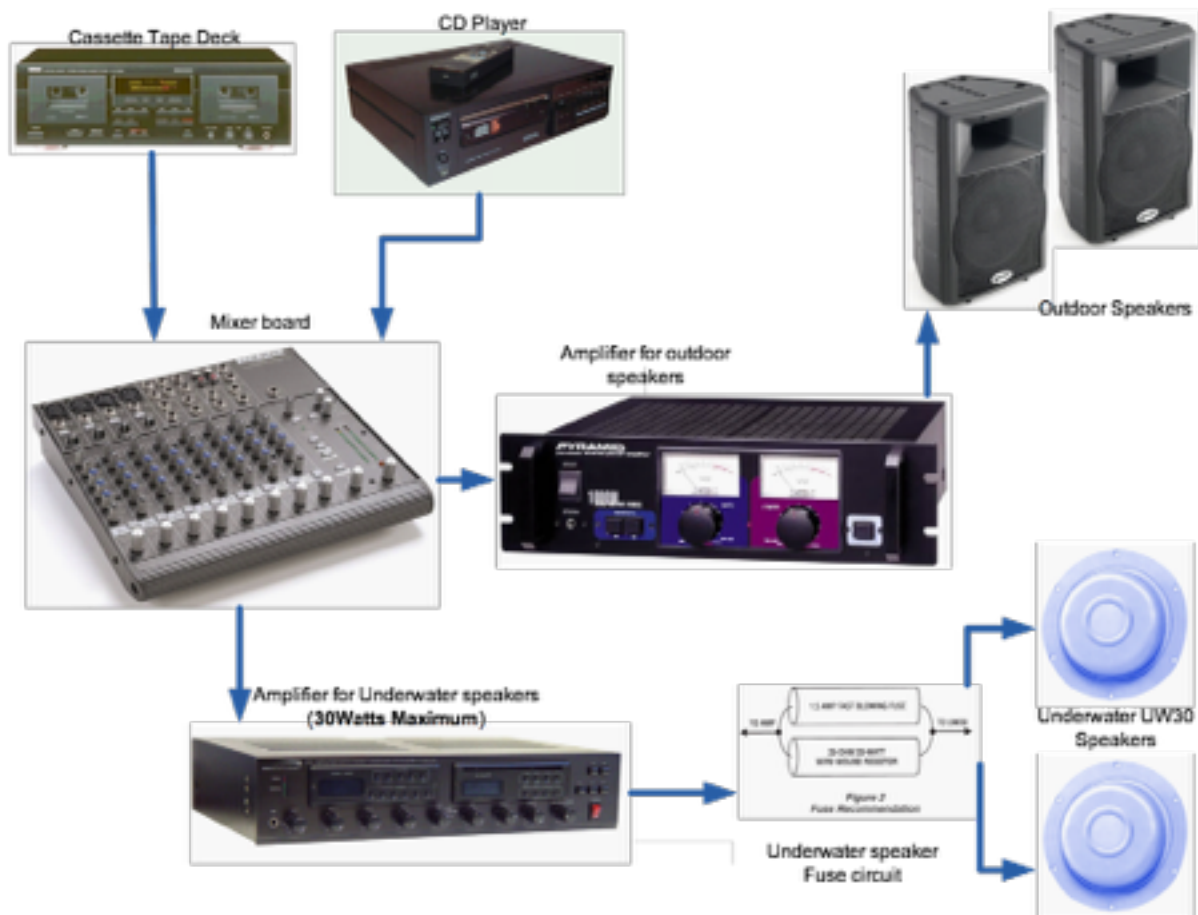
The UW30 Manual recommends the creation of this flash fuse circuit between the amplifier and the speaker. This is a good protection (although not a guarantee) of speaker damage from a power surge or overload. We strongly recommend using such a circuit to protect the UW30 speaker.



Figure 2
Fuse Recommendation

Amplifier Connection

This is, by far, the most important aspect of protecting the underwater speaker. Since the power to the speaker is not guaranteed by volume alone, the only safe method of ensuring a connection is to power the underwater speakers from a unique 30W maximum amplifier. The most common error of new sound technicians to a synchronized swimming competition is to simply plug the UW30 into their standard amplifier with a promise to “keep the volume low”. This is a virtual guarantee of a blown speaker.



Specifications

UW30 50 feet of cable (15.24 m)
System Type: Underwater loudspeaker system
Frequency Response: 100-10,000 Hz
Power Handling, (500-5,000 Hz pink noise): 30 watts
Impedance: Nominal: 8 ohms
Dispersion: Omnidirectional underwater
Operating Depth: Up to 3.0 m (10.0 ft) below surface of water
Recommended Installation Depth: 1.2 m (4.0 ft)
Finish: Pool blue
Dimensions,
Overall Diameter: 182.6 mm (7.19 in.)
Depth: 66.3 mm (2.61 in.)
Shipping Weight: 1.8 kg (4.0 lb)