

Weight systems

Conventional weight belts are pretty simple, consisting of a nylon web belt with removable weights; this allows a diver to adjust buoyancy for a dive. A single quick-release buckle lets the diver rapidly ditch the weight if the need arises. This is similar to the pocket belt, which stores the weights in secure pockets. These allow a diver to more readily change the weight carried on the belt, and the fabric pocket reduces the discomfort and abrasion that comes with conventional exposed lead weights.

Over the years, there has been a growing trend in integrated weight systems. These are buoyancy compensation devices designed to hold some or all of the diver's weights: An emergency-release handle allows the diver to quickly release part or all of the weight.

Weight harnesses are also popular with some divers. Unlike a conventional belt, which fits around a diver's midsection, these devices distribute the weights evenly about the diver's torso; this design holds the weights more securely and comfortably.

Like an integrated weight system, the harness is typically designed with a quick-release mechanism, which allows a diver to discard part or all of the weight.

Many divers also use trim weights and ankle weights to properly adjust their underwater swimming attitude and their buoyancy. These are fixed weights that cannot be quickly ditched, but generally they represent only a small percentage of the diver's total weight.

Not as easy as they look

Despite their inherent simplicity, weight belts and weight systems can create serious complications on a dive. As the two reports above illustrate, divers sometimes experience accidental loss of weights or belts, resulting in unplanned or rapid ascents.

In some instances, weight belts shift during the dive, making the emergency release inaccessible. Other times, situations arise where a diver must "lose the lead" to establish buoyancy and become stabilized. In such situations, it is essential that the release system functions properly and that the weight can be jettisoned in a fashion that prevents entanglement.

To learn more about the problems associated with weight belts and weight systems, the Scuba

STAR Network conducted an online safety survey in August and September 2008. The survey, to which nearly 300 divers responded, posed these questions:

- What weight systems do divers use?
- How do they use them?
- What problems do they encounter?
- How do they resolve those problems?

The preliminary results of the survey offer some important insights.

What divers wear

Divers have taken readily to the concept of integrated weight systems, with 70 percent of divers surveyed responding that they usually use such a system. Roughly half of those units incorporate a single release to ditch weight, and the other half use multiple releases to allow ditching part of the weight. Only one out of six divers responding uses a conventional weight belt, and half that many use pocket belts.

Only about four divers out of 100 reported that they use a weight harness. Roughly one-third of the divers surveyed reported that they use ankle or trim weights of some sort. Ankle weights in particular are popular among divers who use drysuits.

Predive inspections

Divers vary in the attention they give to their weight systems. Obviously, a more complicated weight system deserves a more thorough inspection, so the details of the predive weight system check vary considerably. The survey asked divers these questions:

- How often do they include a check of their weight system in their safety check?
- How often do they check the condition of the weight system?
- How often do they check the function of the weight system?

Table 1. Weight System Inspections

Weight System Inspection Items	Percent of Divers Inspecting This Item
Buckle condition	66
Buckle function	63
Stitching condition	67
Other physical damage	78
Pocket closures/security	82
Weight attachment	60
Weight release function	83
Visual inspection	86

Seventy-five percent of the surveyed divers reported that they check their weight systems before every dive, with another 16 percent reporting they check it on most dives (between 7 and 10 out of 10 dives).

Slightly fewer (65 percent) reported that they check the condition of their weight systems on every dive, with another 22 percent reporting they check its condition on most dives. A similar number (62 percent) check the function of their weight systems before every dive, with another 22 percent reporting they perform a function check of their weight systems on most dives.

Again, the specifics of the weight system check vary considerably, as indicated in the table below. For the most part, divers appear serious about checking that their weight systems are in good working condition prior to diving. It's a good thing.

Failures or foul-ups

So what are the most common problems that divers encounter with their weight systems? While the majority (73 percent) of divers responding reported that they never have problems with their weight systems, a full 20 percent claimed to have experienced problems, but on fewer than one out of 10 dives.

One out of five divers reported that they have problems with the weight belt shifting during the dive. This can be a problem, as it makes it difficult to find the weight release in an emergency.

One out of seven divers reported that their weight system requires frequent adjustments during a dive. Obviously, this can be a distraction to a diver.

Surprisingly, 13 percent of all divers responding to the survey reported that they have experienced losing weight from a belt or pocket.