How We Mess Up

Almost no one gets it right

Failure to check the pressure gauge — even at the beginning of the dive — is an error commonly made by divers. Since this is hardly mentioned in accident data, we studied the thoroughness of the pre-dive check.

Fifty-five divers selected at random at an annual dive exhibition were asked to perform their normal pre-dive check on diving equipment (buoyancy compensator, tank, regulator with octopus, pressure gauge, and depth gauge). The equipment had been been doctored to represent nine common equipment faults. No information was given on the number of faults and there was no time limit. The diver's qualifications were not asked for. The time to complete the check varied from 2 to 10 minutes, the average being 5 minutes. We suspect that this is considerably longer than the time most divers spend on an onsite pre-dive check.

The Faults

Air Supply & Regulator Problems
Empty tank
Air supply not switched on
Tape on pillar valve
Regulator mouthpiece torn

Buoyancy Jacket Problems
Power inflator not connected
Inflator hose mouthpiece toward base
Emergency dump valve jammed
Tank loose in BC harness

Depth Gauge Problems
Maximum depth indicator not zeroed

Two of the divers identified all the faults; four detected eight faults. Four divers, however, failed to detect any faults, including an empty tank and a faulty BC dump valve. Only eight divers identified all the buoyancy jacket's faults. Twenty-three divers found all the air-supply faults, but only four of these noticed the torn regulator mouthpiece.

We conducted a similar study on the same equipment with only four engineered faults. Forty-six (4 percent of the divers) failed to detect all four faults. Just over 50 percent of the divemasters and dive instructors identified all four.

Both studies showed that the divers tested did not perform a thorough pre-dive check. ■

Pregnancy and Diving

No definitive evidence, but take care

Pregnant women are told not to dive because they risk injury to the fetus. Nonetheless, some continue to dive. Others, usually in their first trimester, are unaware they are carrying a child.

Caroline Fife, M.D., and William Fife, Ph.D., who have been studying the issue for many years, wrote recently of two women who reported that their obstetricians recommended abortion following diving during the first trimester. The recommendations were based on a single, well-publicized 1982 case of an infant who was born with "multiple dysmorphic features," including a short neck. The mother had made 20 dives in 15 days during the first trimester, to a maximum depth of 110 feet.

It is unclear, say the authors, whether diving caused these defects. In fact, they find "no case in which abnormal fetal development can conclusively be attributed to diving. Nor is there a clear pattern of increased fetal abnormalities among diving mothers.

"If compressed air diving represents a risk for the human fetus," they continue, "the risk of fetal injury is probably linked to a variety of factors, including gestational age, maternal fitness, maternal age, dive profile, dive frequency, hydration state, and many other, perhaps unknown, factors.

"It is therefore impossible to make recommendations as to whether there is a gestational period in which diving is safe. However, although diving may be a risk, the odds are still in favor of a normal infant, and pregnancy termination due to a history of diving would seem an extreme measure."

The authors do report pregnancy-related complications among women divers. In one study, two spontaneous fetal losses occurred, including one first-trimester fetal demise after two dives to 60 feet.