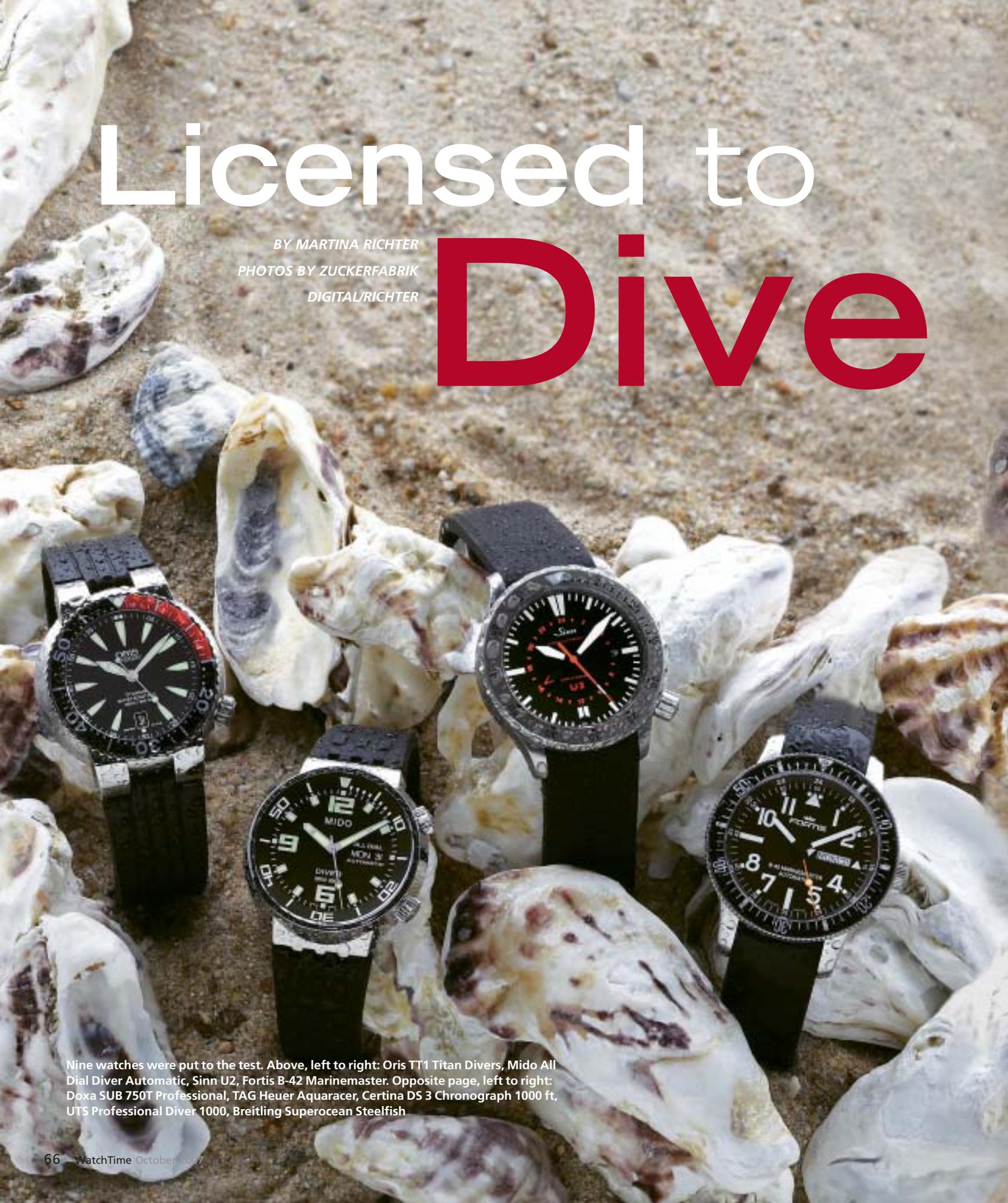


Licensed to Dive

BY MARTINA RICHTER
PHOTOS BY ZUCKERFABRIK
DIGITAL/RICHTER



Nine watches were put to the test. Above, left to right: Oris TT1 Titan Divers, Mido All Dial Diver Automatic, Sinn U2, Fortis B-42 Marinemaster. Opposite page, left to right: Doxa SUB 750T Professional, TAG Heuer Aquaracer, Certina DS 3 Chronograph 1000 ft, UTS Professional Diver 1000, Breitling Superocean Steelfish



Our comparative test subjected nine divers' watches from an array of manufacturers to extreme water pressure and corrosive saltwater conditions. Which of these tough timepieces holds up most reliably for deep-sea professionals?

WHAT WE TESTED

1. Legibility: the time, the preset dive time, and whether we could observe, at 25 cm away under all lighting conditions, if the watch was running
2. Proper functioning of the operating elements
3. Proper functioning of the mechanism to preset the dive time: if it protects against unintentional repositioning, if it is calibrated in minutes, and if the calibrations are clearly distinguishable from the markings of the five-minute increments
4. Level of comfort and security on the wrist
5. Rate behavior
6. How the hermetic seal performs under extreme air pressure, by subjecting watches with an interior pressure of 1 ATM to an exterior pressure of 2 ATM
7. Reliability of functions under extreme water pressure, by immersing each watch in water for 20 minutes, and subjecting it to the amount of pressure the manufacturer claims it can withstand
8. Level of water-resistance under extreme water pressure, by exposing the watch for one hour to pressure equivalent to 1.25 times the amount the manufacturer claims it can withstand, following that up with pressure of 0.3 ATM for one hour. Condensation tests before and after determine the accuracy of the watch's water-resistance claims
9. Resistance to corrosion by saltwater, by immersing the watch in a three-percent air-saturated solution of sodium chloride at a temperature of 23.5° C (73.4°F) for 24 hours



Conducting the condensation test on nine divers' watches



WATER-RESISTANCE: A FEW THINGS TO KNOW

The watch industry commonly measures levels of water-resistance in feet or meters (equivalent to approximately 3.3 feet). Two other measures are sometimes used: ATM (for atmospheres) and bars. One ATM and one bar are equivalent to 10 meters/330 feet.

The level of watch water-resistance indicated on a watch dial or caseback does not refer to the depths at which a diver can wear a watch under water. It is a theoretical measure of the depth at which a watch will keep out water if both the watch and the wearer are motionless. In real life, the movement of the wearer's arm through the water generates additional pressure on the watch. Keep in mind that a watch's specified water-resistance level is the result of tests conducted in a laboratory, not in the ocean.

For water sports, the following minimum levels of water-resistance are recommended:

*30 meters/100 feet: Sailing, boating, fishing

*50 meters/165 feet: Swimming

*100 meters/330 feet: Snorkeling and surfing

*200 meters/660 feet: Skin diving and scuba diving

Professional deep water divers use watches with water-resistance of 1,000 meters/3,333 feet or more.

BREITLING

SUPEROCEAN STEELFISH

Since 1957, special technical features have distinguished each successive generation of Breitling's Superocean wristwatches. The Steelfish is no exception. Breitling asserts that it remains water-resistant to 2,000 meters. The Steelfish's case is very well-equipped to survive such an ordeal. It has a helium-release valve to compensate for differences in pressure between the interior of the case and the surrounding environment that occur when divers spend time in a pressurized chamber. The massive steel body withstood the pressure that the dial indicated it would. Subsequent measurements with a finely calibrated straightedge revealed no damages, but the sapphire crystal shattered when the hydrostatic pressure reached the vicinity of 190 ATM. Since the case suffered no ill effects from the pressure, we can assume that the crystal cracked because of a material defect of its own. According to one watch expert, "such mishaps can occasionally occur because of the extremely high pressure to which the sapphire crystals are subjected."

Of course, our tests subjected these timepieces to extraordinarily severe pressures that they would not encounter in normal dives. Suffice it to say that the ill effects on the watches aren't likely to occur in ordinary use.

We tested a second sample of the same Breitling watch, and the back of its case again suffered no deformations — and this time, the sapphire crystal didn't shatter. Cooling the dial revealed no condensation, which proved that the case remained watertight. The movement continued to run throughout the entire testing procedure.

The design and the styling of the dial and case are typical of Breitling's watches. Atop the black guilloché-decorated dial and beneath the slightly domed sapphire crystal, which is nonreflective on both sides, are polished hands, polished numerals and applied indices. As daylight faded into twilight, each of these indicators began to glow brightly, ensuring maximum legibility. The small luminous dot on the seconds-hand instantly indicates the watch is still running. The Super-LumiNova



The Breitling Superocean Steelfish, water-resistant to 2,000 meters



The folding clasp fastens securely; the Breitling logo is engraved on the steel caseback.



The dial of the Superocean proclaims that the watch has been awarded a chronometer certificate.

coating on the index on the bezel glows as brightly as the indices on the dial.

To precisely set the beginning of each dive, the luminous cursor on the bezel tapers to a point and glides over a stationary ring marked at five-minute intervals. These markings are so accurately applied that they almost make the minute circle redundant. The rotating ring clicks



Although it's flanked by protective elements, the crown is easy to operate. A helium valve, to compensate for pressure differences between the interior of the case and the exterior environment, is on the other side of the case.



The hands and all luminous dots are equally bright. The motion of the seconds hand is easy to see in all lighting situations.



In the first Breitling we tested, the case withstood water pressure of 250 ATM, but its crystal shattered. The crystal on a second sample of the same watch passed the test with flying colors.

into place in 30-second increments. Four raised cursors (one each at the 3, 6, 9 and 12 o'clock positions) ensure that the ring can be easily grasped and positioned, even if you're wearing gloves. The doubly insulated crown is screwed and flanked by protectors. It is very easy to unscrew, to extract into the various positions and to turn when winding the watch's mainspring, quickly resetting the date display or repositioning the hands.

A chronometer-certified movement does its duty inside the case. Incidentally, Breitling's watch is the only one among those we compared that contains a caliber that has earned a COSC certificate. Calibre 17 is based on an ETA movement, and has been finished and regulated by Breitling. We measured an average daily gain of five seconds and a gain of 2.2 seconds after the watch had undergone our extreme stress tests. These results indicate that it per-

COMPARATIVE TEST: NINE DIVERS' WATCHES

formed within the tolerance spectrum specified by the rigorous chronometer-certification procedure. The balance's amplitude varied between 300° and 275°.

The partly matte-finished steel bracelet has a folding clasp, a divers' extension piece and a safety bow — three features that make it well-suited for dives.

CERTINA DS CHRONOGRAPH 1000 FT

After the re-release of its DS 3 1000 m, Certina introduces a chronograph version that's water-resistant to 1,000 feet, or 330 meters. We tested this claim by subjecting it to pressure conditions that correspond to 330 meters' depth — and this watch performed with flying colors. It kept running during the test and after it had been subjected to water pressure of 30 ATM for 20 minutes. The case remained watertight during and after immersion for one hour at 41.25 ATM. Neither the saltwater bath nor the air pressure test (less than 2 ATM) caused noticeable changes.

The acronym "DS" stands for the "Double Security" system developed by Certina in 1959, which uses a screwed crown, a screwed back and a sapphire crystal. There's also a pane of sapphire in the back; looking through it, you'll notice an unadorned ETA/Valjoux 7750. This caliber gained 4.2 seconds before the tests and with the chronograph function switched



The Certina DS 3 Chronograph 1000 ft, water-resistant to 330 meters



The hands — especially the dominant minute hand — outshine the indices in the dark. The marking on the rotating bezel doesn't glow brightly enough.



The Certina's chronograph functions are displayed on guilloché-embossed subdials at the 12, 9 and 6 o'clock positions.



The massive stainless steel bracelet has a folding clasp with a safety bow and divers' extension piece.



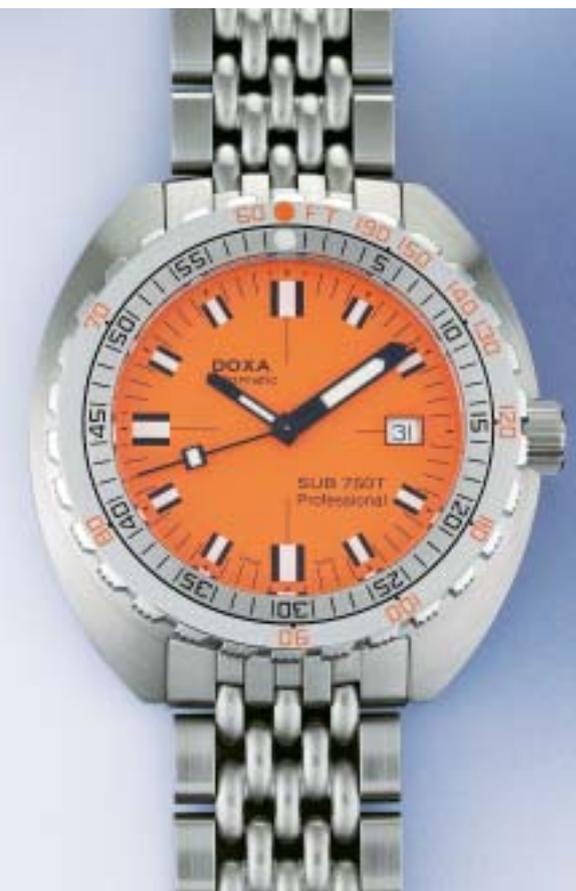
The steep downward curve of the middle part of the case guarantees a close fit around the wrist.

off; the gain declined to 1 second after the tests. The amplitude also declined from 274° before the trials to 256° after them. When the chronograph function was switched on, the amplitude values declined further, both before and after the pressure tests.

The chronograph functions are unobtrusively displayed on guilloché-embellished subdials, each surrounded by a shiny ring. The continually running seconds hand has no luminous coating, so if you're in the dark and you want to be sure that your watch is still running, you'll have to switch on the chrono-



Doxa's flexible bracelet ensures comfort on the wrist.



The Doxa SUB 750T Professional, water-resistant to 750 m, is a redesign of the SUB 300T from the 1960s.



When we tested it under water pressure, our first Doxa watch stopped running before the pressure reached the level that the manufacturer claimed it could withstand. The second sample continued to run properly.

graph and see if the center-mounted elapsed-seconds hand starts moving around the black dial. This hand's luminous tip is easy to see, as are the hour hand and minute hand, both of which glow brighter than the somewhat dimmer indices. The minute hand's luminous dominance is an important detail, as it is particularly important during a dive. Unfortunately, another important element, the dot on the bezel, glows rather dimly in comparison. The bezel's five-minute increments are correctly marked white Arabic numerals against a black background, but this bezel (like many others) restricts single-minute increments to the first 15 minutes. The unidirectionally rotating ring has a slightly conical shape that tapers as it rises, is easy to grasp even if one is wearing gloves, and clicks securely into each of its 120 positions.

The relatively small crown is so perfectly connected to the case that it's almost unnoticeable and it's surely not bothersome when it's unscrewed. A bit of practice may be needed to coax it into its screwed position, but unscrewing it is a comparatively uncomplicated task. Slipping a fingernail under the unscrewed crown lets you lift it into its three extracted positions: one for manually winding the main-spring, another for quickly adjusting the date and day-of-the-week displays, and a third for setting the hands. The chronograph's push-pieces operated without problems.

The massive case has a tonneau-shaped middle piece and an equally massive stainless-steel bracelet with a folding clasp, safety bow and divers' extension piece. The DS 3 Chronograph 1000 ft is made in a limited edition of 1,888 pieces, each individually numbered and delivered with a certificate.



All elements are equally bright, but the minute hand dominates because of its large size. The luminous dot on the bezel is also clearly distinguishable.



The large screwed crown has the same type of grooves as the bezel, making it easy to grasp and operate.

DOXA

SUB 750T PROFESSIONAL

Not quite 40 years after the extraordinary success of its SUB 300T divers' watch, Doxa has launched a nearly identical timepiece, in a style reminiscent of the 1960s. The chief difference is that the new model is water-resistant to 750 meters. The broad case and downwardly curving lugs — similar to those of the Certina — combine for a secure fit around the wrist. Integrated lugs and an uncommonly flexible bracelet also ensure wearing comfort, and a folding clasp, safety bow and a divers' extension piece complete the ensemble. Along with the watch, Doxa includes a special tool and instruc-



The Fortis B-42 Marinemaster, water-resistant to 200 meters



Long, downwardly curving lugs contribute to the wearing comfort. The crown, which is not screwed, is adorned with Fortis's logo.



With white elements changing to blue, the B-42 Marinemaster is very legible in the dark. The small triangle at the 3 is a useful detail.



tions explaining how to shorten the bracelet for a customized fit. The orange dial, which first appeared in 1968, was chosen to ensure maximum legibility in any situation. It is very easy to read under daylight conditions; high contrast between the dial and the black-and-white indices enhances its legibility in twilight; and the indices' high luminosity guarantees good readability even in complete darkness. That is when the all-important minute hand becomes even more visible and the luminous dot on the bezel becomes particularly dominant.

The single-minute calibrations on the bezel's minute circle match the calibrations around the periphery of the dial. Arabic numerals at five-minute intervals add emphasis to these positions. The bezel, which can be rotated counterclockwise, clicks into place in half-minute increments. If you want to reset its position, you won't need to remove your gloves first, because the bezel's rim has notches that guide your fingers for easy operation. Slender striations make it nearly impossible for your fingertips to slip.

The bezel also has a special, patented feature: if you set the doubled ring for the intended depth of your upcoming dive, the bezel will also indicate the corresponding dive time (not including decompression phases).

The crown is large and has the same kind of grooves as the bezel, so it can be easily held and won't slip through your fingers. You will, however, need a bit of manual dexterity to screw the crown into the case. The crown wiggles around a bit in its extracted position, but this doesn't interfere with its proper functioning.

The Doxa's case handily passed tests in salt-water and under extreme air and water pressure. We set our machine to exert 93.75 ATM of water pressure, but the watch stopped running shortly before the pressure reached 75 ATM. As we did with the Breitling watch, we asked Doxa to send us a second sample. It soon arrived, we duly examined it, and it passed every test. When we lowered the pressure, the first one resumed running and its ETA 2824-2

The double-folding clasp with pressure-sensitive locking buttons is convenient, but lacks both a divers' extension piece and a safety bow. The only way to shorten the strap is to cut it.



The Marinemaster has a rotating bezel with fully calibrated minute circle.

caliber gained 10 seconds per day. Prior to the test, this self-winding caliber had gained 13.4 seconds each day. The amplitude remained stable at 288°.

The unembellished movement is concealed behind a massive steel back, which suffered no damage during the pressure tests. It is unclear why the first watch, and some others we tested, stopped running. Possibly, high pressure causes tensions in the movement, which may ultimately stop the gears. Or perhaps the crystal sinks slightly because its insulation is compressed, grazing the hands and stopping their motion. Whatever the reason, we are confident that the Doxa will function well under "normal" diving conditions.

Produced in a limited edition of 5,000 pieces, the SUB 750T Professional is available only by direct sale through Doxa's website, www.doxawatches.com.

FORTIS **B-42 MARINEMASTER**

The B-42 Marinemaster impressed us with the clarity of its dial. The numerals, indices, triangles and hands are large and white, so they contrast sharply with the black background. Their color also enhances their legibility beneath the sapphire crystal, which is nonreflective on both surfaces. It's easy to make sure that the watch is running: just take a peek at the slender, orange seconds hand. The luminous dot on this hand is impossible to miss in the dark, as are all the other important displays, which glow with a bluish hue. At the 3 o'clock position, two triangles flank the rectangular window in which the date and the day-of-the-week display appear. These triangles indicate the direction in which the crown must be turned to adjust the displays in the



The Mido's folding clasp has a convenient snap-shut closure, a safety bow and a divers' extension piece.



Two crowns on a tapered case: the left crown winds the mainspring and sets the watch; the right crown moves the minute ring, which is below the sapphire crystal. Both crowns are screwable.



In the dark, the hands glow more brightly than the numerals, the indices and the luminous dot on the bezel.



The Mido All Dial Diver, water-resistant to 200 meters

window, but only the triangle near the periphery is luminous. Together with the large triangle at 12 o'clock and the other glow-in-the-dark indices, it completes the wreath of luminous hour markings. The Super-LumiNova capsule on the rotating bezel is somewhat less noticeable than these brighter markings; it glows green rather than blue, which helps to distinguish it from the other displays.

The Fortis's bezel rotates counterclockwise and clicks into place in half-minute increments. The minute circle is completely calibrated, and the five-minute intervals are clearly marked with numerals or broad, white strokes. The bezel's rim is finely grooved, which almost makes it easier to operate with gloves than without them. This watch's crown is the only one in the comparison that isn't screwed. Nevertheless, in our test, the case remained impermeable in saltwater and under strong air or water pressure. The watch is designed to resist 25 ATM of water pressure for one hour — and it lived up to these specifications. Before we tested the watch, the average daily rate of its self-winding ETA Caliber 2836-2 gained 9.8 seconds. After the tests, that rate declined to seven seconds. The amplitude changed by 10 degrees, from 288° before to 299° after the tests.

A rubber strap is screwed to the tripartite, matte-finished, stainless steel case. A double-folding clasp, which unfortunately lacks a divers'

In the test under extreme water pressure, the first sample of the All Dial Diver stopped running at 15 ATM.



The hands and appliqués rise high above the dial. Only the first 10 minutes are individually marked along the rotating minute circle.

extension piece, securely closes the strap. If you want to shorten the strap, however, you'll have to cut it, and it can be lengthened only slightly.

MIDO ALL DIAL DIVER

Sporty aesthetics distinguish the appearance of the All Dial Diver. The case tapers as it rises, and its shiny finish contrasts attractively with the elegantly smooth black of the dial, where large numerals and applied indices collaborate with broad hands to ensure high contrast and maximum readability. The hour hand, the minute hand and the little luminous triangle near the tip of the seconds hand all gleam brightly in the dark. If this triangle is moving clockwise, the diver knows that his watch is still running. The luminous marker to set the time when a dive be-



The Oris TT1 Titan Diver, water-resistant to 300 m, is distinguished by its black-and-red color scheme and wavy dial.



The folding clasp has pressure-sensitive locking buttons, a safety bow and a divers' extension piece. Oris's typical rotor is visible on Caliber 733 in the background.

gins isn't quite as eye-catching: it's located on a bidirectionally rotating ring that surrounds the dial below the sapphire crystal, which is nonreflective on both its surfaces. A screwed crown at 2 o'clock can be turned to rotate this ring to the



This watch didn't stop running until the pressure reached 35 ATM, backing up the watch's claim of being water-resistant to 300 meters.



Elongated, downwardly curving lugs ensure that the watch fits the wrist. Oris screws the rubber parts of the strap to the case. The crown at 4 o'clock is also screwed.



The minute circle on the rotating bezel is colored bright red for the first quarter-hour.

desired setting and to keep it fixed in its preset position. The ring clicks into place in half-minute increments and remains immobile after the crown has been screwed shut, thus helping to ensure the safety of the diver. The crown cannot be unscrewed while wearing gloves, nor can the other crown at 4 o'clock, which winds the main-spring and sets the day/date display and the positions of the hands. The rotating bezel below the dial is correctly calibrated with numerals and indices in five-minute increments, but the single-minute calibrations on the minute circle extend only through the first 10 minutes.

A transparent pane of mineral crystal, held in place by four screws, lets you peer through



The hands outshine the other index markings at night. The luminous dot on the bezel is fairly easy to discern, as well.

the back to see a slightly decorated ETA Caliber 2836-2. This caliber gained 8.4 seconds per day before the testing and gained four seconds per day after it. The amplitudes ranged between 287° and 303°.

The All Dial Diver passed the saltwater, air-pressure and water-pressure tests, but the watch stopped running when the water pressure reached 15 ATM. A second sample of the same watch kept running when the water pressure reached 20 ATM, but the first one's results should cause concern for a diver. Pressure conditions of 15 ATM can occur relatively easily if a diver makes strong motions while swimming or diving. The Doxa, for example, didn't stop running until the pressure had increased to a much higher level than would ordinarily be encountered on an actual dive.

The Mido's rubber strap is affixed to the case by special strap lugs. It has a fully functional folding clasp, pressure-sensitive buttons to release the clasp, a safety bow and a divers' extension piece.

ORIS TT1 TITAN DIVER

The TT1 Titan Diver has 44-mm-diameter case that tapers as it rises, so it looks significantly smaller than it really is. The dial is simple and clear. The screwed crown is placed at 4 o'clock. The intelligently designed bezel boasts a red-and-black color combination. It rotates in only one direction — counterclockwise — and clicks into place in half-minute increments, an important feature for divers. The regularly spaced fluting around the rim makes the bezel easy to grasp and to set, with or without diving gloves on.

The hands dominate the dial during the day, and they are just as prominent at night be-



The Sinn U2, water-resistant to 2,000 meters



The first quarter-hour on the minute circle is precisely calibrated in half-minute increments.



The hands turn green and the indices turn blue when the lights go out. The marking on the bezel to preset the diving time is noticeably dominant.



The crown at 4 o'clock is firmly screwed and triply insulated. The strap continues the line of the case and contributes to a secure fit.

cause they glow more brightly than all the other index dots and strokes. The motion of the bright dot on the seconds hand assures the wearer that his timepiece is still functioning. Close examination under good light reveals that the indices are neatly inserted appliques affixed to the black dial, which has a wavy surface texture. The prominent date display at 6 o'clock can be easily reset by the crown, which is screwed. Protruding from the rim of the case at 4 o'clock, it is easy to unscrew and operate, though it moves somewhat loosely in its extracted position. A sustained motion of the hand is needed to screw the crown shut again, but it remains securely closed afterward. The strap and its clasp are just as secure. Oris uses a special method to screw the rubber components to the strap lugs, which are long and downwardly curved for a good fit around the wrist. The folding clasp is equipped with everything the strap of a divers' watch needs: pressure-sensitive buttons to unlock the clasp, a safety bow and an extension piece.

A crystal viewing pane in the case's screwed back offers an unimpeded view of the Oris self-winding Caliber 733, which is based on an ETA caliber and augmented with Oris's typical partly red rotor. The rate results are exemplary, with the movement gaining 1.4 seconds daily before our test series and 2.9 seconds after it. The



The rubber strap's folding clasp has a snap-fit closure and a divers' extension piece.

amplitudes ranged between 285° and 292°. The TT1 Titan Divers passed all tests of functional security and impermeability under extreme air pressure and water pressure: these included subjecting the watch to a pressure of 37.5 ATM for a full hour. The hands on the Oris stopped moving only when the pressure reached 35 ATM, which supports the company's claim of water-resistance to 300 meters. The watch's case did remain impermeable up to 37.5 ATM. The Oris is also unaffected by exposure to saltwater. Even after bathing in the brine for 24 hours, no changes were noticeable on the watch.

SINN U2

Headquartered in Frankfurt, Germany, Sinn crafts the case of its U2 divers' watch from the same steel alloy that's used to build U-boats. As one would expect, the material combines extreme resistance to saltwater corrosion with uncommon antimagnetic properties; the U2 easily passed the saltwater test to which we subjected it. The movement is borne in an arid, noble gas atmosphere (argon): this is intended to enhance the regularity of the rate and to lengthen the times between servicing. The case contains three dry capsules, one of which is visible at the 6 o'clock position. The color of the display gradually changes from white to blue to indicate the progress of the saturation process. A special oil ensures that the movement will keep functioning at temperatures between minus 45° C (-113° F) and plus 80° C (176° F). Obviously, we weren't able to test this claim, although the rate results speak for themselves. The ETA self-winding Caliber 2893-2 includes displays for the date and for the time in a second time zone. It gained an average of 3.2 seconds per day before we'd subjected it to a rigorous series of pressure tests; after the tests, the daily gain increased to four seconds. The amplitude changed from 275° to 288°. What is "rigorous"? Like the Breitling, the U2 spent an hour subjected to water pressure of 250 ATM. This watch survived the ordeal, never faltered, and continued to run impeccably.

The time is displayed under a 4.2-mm-thick



The TAG Heuer Aquaracer, water-resistant to 300 meters

pane of domed sapphire crystal that's non-reflective on both its surfaces. The dial is matte black. Bold white hands and indices create high contrast; plenty of noctilucous coating guarantees intense luminosity in the dark, when the blue glow of the indices contrasts with the green gleam of the hands and the big triangle on the bezel. The luminous paint on the seconds hand isn't quite as eye-catching — a pity, because the seconds hand on a divers' watch, as we've noted, should glow brightly during a dark dive to reassure the diver that his watch is still running. Fortunately, the red V-shaped arrowhead, which indicates the hour in a second time zone, becomes invisible in the dark, so the wearer won't be confused by it and will be better able to concentrate on the other indications that are more important during a dive.

The markings on the unidirectionally rotating bezel can be turned in single-minute increments until they match the corresponding hands. The dive time can also be preset in single-minute increments by adjusting the rotating ring. The first 15 minutes are marked in black, the remaining 45 minutes in red, with

the exception of the five-minute markings, which are indicated by black Arabic numerals.

The bezel, which has been hardened to 1,500 HV, has semicircular notches around its periphery to guarantee a non-slip grip on the ring, either with or without gloves. The crown is also easy to grip and unscrew. Positioned at 4 o'clock, it's protected by three insulators. When it's extracted to its unscrewed positions, the crown can manually wind the mainspring, set the hands, reset the date display and select a second time zone. A modicum of pressure and a bit of practice are all you need to return the crown to its secured home close to the case's rim.

The stately 44-mm-diameter case is affixed to a masculine rubber strap with a folding clasp. The clasp has pressure-sensitive buttons to unlock it and a divers' extension piece to lengthen the strap.

TAG HEUER AQUARACER

With a diameter of 38.4 mm and a height of 11.2 mm, the Aquaracer is considerably smaller than the other watches in this comparative test, which makes it an excellent choice for women divers with slender wrists. Milled from a solid block of stainless steel, the first-rate case transitions harmoniously into an equally high-quality bracelet with a massive folding clasp. The elegantly designed clasp has a divers' extension piece and a safety bow. The crown, which screws into the case and is flanked by protectors, is more easily extracted by a lady's slim fingernail than by the blunt tips of a man's thumb and index finger. It has three withdrawn positions: one for winding the mainspring, another for quickly resetting the date display, and a third for setting the hands. Screwing the crown back into its locked position demands a certain amount of manual dexterity.

If you look through the sapphire crystal, which is nonreflective on its lower surface, you'll find neatly applied indices and faceted hands contrasting with a black dial adorned with *clou de Paris* embellishment. Super-Lumi-Nova coating on the hands and indices ensures



The Aquaracer's dial is legible in the dark, but no luminous dot on the seconds hand makes it more difficult for the wearer to see if his watch is still running.



The crown is rather small and flanked by protectors, so it is a bit difficult to operate.



Fine details on the bezel: raised cursors improve the handling when setting the diving time. Unfortunately, there is no minute circle.



The watch's clasp has a divers' extension piece and safety bow.



The UTS Professional Diver 1000, water-resistant to 1,000 meters



All elements of the time display glow bright green in the dark. Even the seconds hand is completely coated with luminous paint.



The milling on the rotating bezel guarantees good operability. Unfortunately, this watch's bezel lacks a complete minute circle.



The massive, double-folding clasp is reliable, but it includes neither a divers' extension piece nor a safety bow.



Despite its angular, masculine lines and heavy weight, the UTS fits comfortably around the wrist.



Discolorations appeared in some places on the UTS's case immediately following the salt-water test, but disappeared soon afterward.

they glow brightly when the lights go out. All luminous components are equally bright, including the glow-in-the-dark dot on the rotating bezel. Only the seconds hand has been shortchanged: it lacks a luminous element, so it becomes difficult to see if the watch is still running under poor lighting conditions.

The shiny bezel, which rotates in one direction only and clicks into place in half-minute increments, makes a stylish first impression, but closer inspection reveals that the bezel lacks a minute circle, although engraved numerals or raised bars mark the five-minute intervals. These bars, incidentally, make the rim easier to grasp and prevent slippage when presetting the intended dive time. Built to withstand water pressure of 300 m without springing a leak, the Aquaracer easily passed our saltwater test and sailed smoothly through our air-pressure and water-pressure ordeals. The water-pressure test subjected this watch to 37.5 ATM of pressure for 60 minutes. Calibre 5, which is based on an ETA 2824-2, gained an average of 11 seconds per day after the test. Its daily gain had been 15.6 seconds before the test. The amplitude ranged between 294° and 286°.

UTS MUNICH PROFESSIONAL DIVER

Among the distinguishing characteristics of the UTS Munich brand is the case, which is made by mechanically chipping away all extraneous material. Other hallmarks include the typical screwed adapters for the bracelet and the six uncommonly large screws that hold the 3-mm-thick back firmly in place. The back, like the screwed crown, is doubly insulated. The crown, which is the only polished element, is large and easy to operate. The internal mechanisms are protected by a 3-mm-thick pane of

sapphire crystal that's nonreflective on its lower surface. All the elements combine to make this watch water-resistant to an impressive 1,000 meters. Weighing a whopping 245 grams, this behemoth easily withstood high levels of air pressure and water pressure. In the latter ordeal, we subjected it to 125 ATM of water pressure for a full hour. The movement also performed well. The self-winding ETA Calibre 2824-2 inside the case gained 7.2 seconds per day before the test and six seconds per day after it. The amplitude declined from 296° to 267°. The rust-resistant, low-nickel stainless steel alloy (number 1.4305) showed some spots of discoloration after immersion in saltwater, but these soon vanished. Caused by thin layers of oxide, they're comparable to tarnish on other metals.

This angular timepiece — which, like all UTS watches, was designed by engineers — fits very well on the wrist thanks to long, downwardly curved lugs and an appealing metal bracelet. Unfortunately, the massive, double-folding clasp lacks both a safety bow and a divers' extension. The rotating bezel lacks minute indicators from 15 to 60. Numerals and indices mark the five-minute intervals. Twelve milled indentations make the bezel easy to grip and adjust, both with and without gloves. The bezel rotates counterclockwise and clicks into 60 positions. When the lights go out, the bezel's luminous dot, which is used to set the all-important dive time, glows just as brightly as the hands and indices. All luminous elements glow an intense green. The seconds hand is coated from tip to toe with luminous material, making for maximum visibility when a diver checks to see if his watch is still running. Under daylight conditions, the white hands contrast attractively and clearly with the blue dial. ■



WATCH

	BREITLING	CERTINA	DOXA	FORTIS
MODEL	Superocean Steelfish	DS 3 Chronograph 1000 ft	SUB 750T Professional	B-42 Marinemaster
REFERENCE NUMBER	992675	674.7128.42.61	7500330003	647.10.41
MOVEMENT	Breitling 17, self-winding	Certina 674, self-winding	ETA 2824-2, self-winding	ETA 2836-2, self-winding
CASE	Stainless steel	Stainless steel	Stainless steel	Stainless steel
• DIAMETER	44.0 mm	44.0 mm	47.0 mm	42.0 mm
• HEIGHT	16.1 mm	15.0 mm	13.5 mm	12.5 mm
CRYSTAL	Sapphire, nonreflective	Sapphire	Sapphire	Sapphire, nonreflective
WATER-RESISTANCE	2,000 m	330 m	700 m	2,000 m
BRACELET/ STRAP	Stainless steel	Stainless steel	Stainless steel	Rubber
LUGS	22.0 mm	21.0 mm	22.0 mm	20.0 mm
CLASP	Folding clasp	Folding clasp	Folding clasp	Double folding clasp
TOTAL WEIGHT	229 g	238 g	191 g	92.5 g
PRICE	\$2,520	approx. \$1,500 (n/a in U.S.)	\$1,969 (direct sales)	\$1,425

MOVEMENT

	BREITLING 17	CERTINA 674	ETA 2824-2	ETA 2836-2
BASE CALIBER	ETA 2824, self-winding	ETA 7750, self-winding	ETA 2824-2, self-winding	ETA 2836-2, self-winding
PRODUCED SINCE	1972	1973	1972	1982
DIAMETER	25.6 mm	30.0 mm	25.6 mm	25.6 mm
HEIGHT	4.60 mm	7.90 mm	4.60 mm	5.05 mm
NUMBER OF JEWELS	25	25	25	25
POWER RESERVE	42 hours	50 hours	49 hours	40 hours
BALANCE	Glucydur	Glucydur	Glucydur	Glucydur
• FREQUENCY	28,800 vph = 4 Hz	28,800 vph = 4 Hz	28,800 vph = 4 Hz	28,800 vph = 4 Hz
• BALANCE SPRING	Nivarox, flat	Nivarox, flat	Nivarox, flat	Nivarox, flat
• SHOCK PROTECTION	Incabloc	Incabloc	Incabloc	Incabloc/Nivacourbe
• FINE ADJUSTMENT	Eccentric / Etachron	Bipartite index	Eccentric / Etachron	Eccentric / Etachron

TEST RESULTS

	BREITLING	CERTINA	DOXA	FORTIS
+	+ Very legible under all lighting conditions + Bezel handles well + Impermeable under extreme air pressure + Good rate results + Resistant to corrosion by saltwater	+ Acceptably legible under all lighting conditions + Bezel handles well + Impermeable under extreme air and water pressure + Good rate results + Resistant to corrosion by saltwater	+ Very legible under all lighting conditions + Bezel handles well + Impermeable under extreme air and water pressure + Resistant to corrosion by saltwater + Comfortable bracelet/clasp	+ Very legible under all lighting conditions + Bezel handles well + Impermeable under extreme air and water pressure + Resistant to corrosion by saltwater + Rubber strap is comfortable
-	- Crystal shattered under extreme water pressure	+ Comfortable bracelet and clasp - Crown can be difficult to handle - Balance's amplitude too low - Luminous dot on bezel glows dimly	- High water pressure affected performance - Somewhat stiff crown - Mediocre rate results	- Clasp has neither a safety bow nor a divers' extension piece



WATCH

	MIDO	ORIS	SINN	TAG HEUER	UTS
MODEL	All Dial Diver Automatic	TT1 Titan Divers	U2	Aquaracer	Professional Diver 1000
REFERENCE NUMBER	M8370.4.58.91	733 7562 7154 RS	1020.0449	WAF2110.BA806	038/200
MOVEMENT	ETA 2836-2, self-winding	Oris 733 Date, self-winding	ETA 2893-2, self-winding	TAG Heuer Calibre 5	ETA 2824-2, self-winding
CASE	Stainless steel	Titanium	U-boat steel	Stainless steel	Stainless steel
• DIAMETER	42.2 mm	44.0 mm	44.0 mm	38.4 mm	43.0 mm
• HEIGHT	11.9 mm	12.3 mm	15.75 mm	11.2 mm	13.5 mm
CRYSTAL	Mineral, nonreflective	Sapphire, nonreflective	Sapphire, nonreflective	Sapphire, nonreflective	Sapphire
WATER-RESISTANCE	200 m	300 m	2,000 m	300 m	1,000 m
BRACELET/ STRAP	Rubber	Rubber	Rubber	Stainless steel	Stainless steel
LUGS	22 mm	24 mm	22 mm	20 mm	22 mm
CLASP	Folding clasp	Folding clasp	Folding clasp	Folding clasp	Double folding clasp
TOTAL WEIGHT	110 g	99 g	188 g	137 g	245 g
PRICE	\$940	\$1,250	\$2,180 (direct sales)	\$1,595	\$2,749

MOVEMENT

	ETA 2836-2	ORIS 733 DATE	ETA 2893-2	TAG HEUER CALIBRE 5	ETA 2824-2
BASE CALIBER	ETA 2836-2, self-winding	ETA 2824-2, self-winding	ETA 2893-2, self-winding	ETA 2824-2, self-winding	ETA 2824-2, self-winding
PRODUCED SINCE	1982	1972	1993	1972	1972
DIAMETER	25.6 mm				
HEIGHT	5.05 mm	4.60 mm	4.10 mm	4.60 mm	4.60 mm
NUMBER OF JEWELS	25	25	21	25	25
POWER RESERVE	40 hours	49 hours	42 hours	49 hours	42 hours
BALANCE	Glucydur	Glucydur	Glucydur	Glucydur	Glucydur
• FREQUENCY	28,800 vph = 4 Hz				
• BALANCE SPRING	Nivarox, flat				
• SHOCK PROTECTION	Incabloc/Nivacourbe	Incabloc	Incabloc	Incabloc	Incabloc
• FINE ADJUSTMENT	Eccentric / Etachron				

TEST RESULTS

	ETA 2836-2	ORIS 733 DATE	ETA 2893-2	TAG HEUER	ETA 2824-2
+	+ Acceptably legible under all lighting conditions	+ Good legibility under all lighting conditions	+ Decently legible under all lighting conditions	+ Acceptably legible under all lighting conditions	+ Good legibility under all lighting conditions
+	+ Impermeable under extreme air pressure	+ Bezel handles well	+ Bezel and crown handle well	+ Bezel handles well	+ Crown and bezel handle well
+	+ Resistant to corrosion by saltwater	+ Impermeable under extreme air and water pressure	+ Impermeable under extreme air and water pressure	+ Impermeable under extreme air and water pressure	+ Impermeable under extreme air and water pressure
+	+ Crown handles well	+ Very good rate results	+ Very good rate results	+ Resistant to corrosion by saltwater	+ Comfortable bracelet and clasp
-	- Extreme water pressure affected performance	+ Resistant to corrosion by saltwater	+ Resistant to corrosion by saltwater	- Second hand is not luminous	- Slight discoloration after saltwater test
-	- Only 10-min. minute circle on bezel	- Crown is slightly stiff	- Clasp lacks a safety bow	- Mediocre rate results	- No minute indicators from 15 to 60