

## **Launch system for inflatable dinghies for a submarine, in particular for covert operations**

5 The invention relates to an overall system for delivering an inflatable dinghy for special forces, which are to be launched from a submerged submarine. The primary consideration here is to minimize the likelihood of discovery during launch.

10 In the phase in which special forces are being deployed from a submarine, the submarine is, on the one hand, forced to stay in an area that is in principle dangerous and, on the other hand, the possibility for movement is restricted by the operation. Likewise, the time which the special forces spend on the surface of the water is associated with a high risk of discovery. In this context, special forces are persons who leave a submerged submarine in order to carry out missions. For this purpose, the special forces leave the submarine via a lock while submerged, for example, and then use the launched inflatable  
15 dinghy to reach the actual location of the mission. As an example of special forces, combat frogmen may be mentioned.

20 There is therefore always a desire to shorten the time for the overall process and to reduce the risk of discovery for the submarine and the special forces.

Thus, this problem is fundamentally different from that of deploying rescue equipment, such as life rafts. Deploying a life raft is much more about rapid and simple location for the purpose of rescuing the crew. Moreover, subsequent locatability of the submarine is also worthwhile in order to enable additional members of the crew to be rescued if  
25 possible, e.g. using a rescue submarine.

EP 2 138 395 A1 discloses a system for deploying a life raft from a submarine.

30 DE 60 2005 00 194 T2 discloses a system for storing and launching a life raft.

DE 10 2009 053 742 A1 discloses an unmanned underwater vehicle and a device for connecting a fibre optic cable to an unmanned underwater vehicle.

It is the object of the invention to minimize the risk by minimizing the time for discovery.

This object is achieved by a submarine having the features indicated in Claim 1, the capsule having the features indicated in Claim 5, and the method having the features indicated in Claim 12. Advantageous developments will be found in the dependent claims,  
5 the following description and the drawings.

The submarine according to the invention has a device for the covert deployment of an inflatable dinghy. This makes it possible not only to deploy divers undiscovered while submerged but also to launch an inflatable dinghy, wherein the likelihood of discovery  
10 during the launch process is minimized. The submarine has a pressure hull. The device has a storage region arranged outside the pressure hull. The storage region is designed for the storage and discharge of a pressure-resistant capsule. In principle, such systems are known for a large number of applications. For example, the prior art includes rescue equipment, e.g. life rafts, that is/are stored outside the pressure hull and can be deployed.  
15 However, the submarine according to the invention differs fundamentally therefrom since, in this case, minimizing the likelihood of discovery during the launching of the inflatable dinghy is a primary consideration.

According to the invention, the capsule is designed to accommodate an inflatable dinghy.  
20 The inflatable dinghy is arranged compactly in uninflated form in the capsule. By way of example and of preference, the inflatable dinghy is arranged in a reduced-pressure environment in the capsule, thereby ensuring a protected environment and thus a longer storage life for the inflatable dinghy.

25 The capsule is of cylindrical design. Here, cylindrical means that the capsule is cylindrical in the central region, while the capsule has end walls, e.g. in the form of hemispheres, at both ends. This shape enables pressure resistance to be achieved in a particularly effective manner.

30 The capsule has two half-shells. The half-shells have a flat connecting region. In particular, each half-shell accordingly has the shape of a cylinder cut in half lengthways, wherein there is an outward-extending connecting region at the edge of the half-shell. This enlarges the contact area between the half-shells, and it is likewise possible to insert seals more easily here. In this case, the two connecting regions can lie flat and along the

section plane through the cylinder. However, it is also possible for the connecting region of one half-shell to overlap the connecting region of the other half-shell. The connecting regions of the two half-shells can be embodied as connecting flanges, for example. The two connecting regions of the two half-shells can be connected to one another by means of adhesives, shear pins or straps, for example. These can likewise be held together by the action of force, e.g. if the interior is evacuated. It is likewise conceivable for there to be magnetic fixing, for example. It is important that the two half-shells can be separated again by a force acting from the inside.

10 The storage region has a clamp device, wherein the clamp device for fixing the capsule is designed to fix the capsule in the connecting region of the half-shells. For this purpose, the clamp device preferably engages over the connecting region of the upper half-shell and thus fixes the entire capsule. As a result, the capsule is held actively in the storage region and can be released by actively releasing the clamp device.

15 The storage region and the capsule are connected to one another by a retention rope, wherein the storage region has a pay-out device for the controlled pay-out of the retention rope.

20 The prior art discloses, for example, rescue capsules which, once released, rise directly to the surface of the water and usually immediately unfold automatically. In contrast, the controlled paying out of the retention rope serves to create a possibility of transferring the capsule into the vicinity of the surface of the water but being able to hold it below the surface of the water. This is because, if the capsule were to rise to the surface immediately, it could be easily discovered, long before the special forces likewise reach the surface of the water. Therefore, the controlled rise through a deliberate paying out of the retention rope by a pay-out device is essential in order to minimize the risk of discovery.

30 In another embodiment of the invention, the pay-out device has a holding device. The holding device is designed to prevent the retention rope from being payed out against the buoyancy of the capsule. It is thereby possible to enable deliberate waiting below the surface of the water in a simple way. The holding device can be embodied in the form of a brake, for example.

In another embodiment of the invention, the storage region is arranged in a closable form below the outer skin in the upper region of the submarine.

- 5 In another embodiment of the invention, the storage region has a separating device for severing the retention rope.

In another embodiment of the invention, the pay-out device is a drum, wherein the length of retention rope which is payed out via the drum is detected by detecting the drum  
10 rotations. Furthermore, the rotation of the drum can be locked to maintain a maximum length of the retention rope to be payed out.

Alternatively, it is possible to use a retention rope with an exactly pre-calculated length, in which case the diving depth of the submarine can no longer be varied retrospectively  
15 during the launch.

In another embodiment of the invention, the clamp device has at least four clamping devices, wherein at least two clamping devices are arranged on each of the two sides of the capsule, and wherein the clamp device is designed for the simultaneous release of  
20 all the clamping devices. Alternatively, it is also possible initially to release only the clamping devices on one side and then to release the clamping devices on the other side.

In another embodiment of the invention, the storage region has vertical sliding elements. The vertical sliding elements serve to guide the capsule as it rises from the storage region.

25 In another embodiment of the invention, the storage region has a hatch. The hatch can be closed in the submerged state after the inflatable dinghy has been launched. This restores the closed outer shell, thereby ensuring that no turbulence occurs at the opening or open components and in this way avoiding the generation of noise. This reduces the  
30 likelihood that the submarine will be discovered after the inflatable dinghy has been launched.

In another embodiment of the invention, the submarine has an exit lock for divers to disembark in the submerged state. Here, the exit lock can be a special lock or can be the

tower lock, for example. The exit lock can likewise be the weapon tube. Preferably, it is also possible for divers to be taken in again via the exit lock.

5 In another aspect, the invention relates to a capsule, wherein the capsule is designed to accommodate an inflatable dinghy. The inflatable dinghy is present in an uninflated, compact form in the capsule. The inflatable dinghy is preferably already connected to an outboard motor in a manner which is suitable for immediate use and, as a further preference, the inflatable dinghy has a tank that is already filled with fuel within the capsule. The capsule is of cylindrical design and has two half-shells. The half-shells have  
10 a flat connecting region. In particular, each half-shell accordingly has the shape of a cylinder cut in half lengthways, wherein there is an outward-extending connecting region at the edge of the cylinder. This enlarges the contact area between the half-shells, and it is likewise possible to insert seals more easily here. In this case, the two connecting regions can lie flat and along the section plane through the cylinder. However, it is also  
15 possible for the connecting region of one half-shell to overlap the connecting region of the other half-shell. The capsule has an inflation device for the inflatable dinghy. To enable the inflatable dinghy to be inflated, the inflation device has an activation device arranged on the outside of the capsule. The connection between the half-shells is designed to be released by the inflation of the inflatable dinghy in the capsule. If,  
20 therefore, the inflatable dinghy is unfolded in the interior by the inflation device, the two half-shells are thereby separated and, in this way, the capsule is opened.

In another embodiment of the invention, the two connecting regions of the two half-shells are connected to one another by means of an adhesive, shear pins or straps, for example.  
25 These can likewise be held together by the action of force, e.g. if the interior is evacuated. It is likewise conceivable for there to be magnetic fixing, for example. It is important that the two half-shells can be separated again by a force acting from the inside.

In another embodiment of the invention, the inflation device has a compressed air  
30 reservoir or a compressed air producing device, preferably a compressed air cylinder. By way of example and of preference, the compressed air reservoir is connected to the inflatable dinghy via an inflation valve. The inflation valve can be switched to a through flow position by means of the activation device. Alternatively, the compressed air reservoir

can be connected to the inflatable dinghy via a closure diaphragm, wherein the activation device is designed to pierce the closure diaphragm.

5 In another embodiment of the invention, the activation device has an activation connection, in particular for pneumatic or hydraulic pressure. The activation connection can be suitable, for example, for screwing or inserting a gas cartridge into the activation connection. It is likewise possible, for example, for the activation connection to be suitable for connection to a breathing apparatus of a diver. As a further alternative, it may be possible for a compressed air producing device which produces a pneumatic or hydraulic  
10 pressure for the activation of the inflation system of the inflatable dinghy to be connected to the activation connection.

In another embodiment of the invention, the activation device has a safety switch, wherein the safety switch has to be turned over or removed to reach the activation connection. As  
15 a further positive side effect, the safety switch thus also ensures that the activation connection cannot be contaminated and, for example, make it more difficult to connect a gas cartridge. In one possible development of this embodiment, the safety switch is simultaneously also of watertight and pressure-resistant design and mounted on the activation device. By shielding the activation connection from an excess pressure of the  
20 environment, accidental activation of the activation device in the event of pressure waves can be prevented. Alternatively, the activation connection can be of pressure-compensated design, thus ensuring that only a considerable pressure difference between the connection side and the ambient pressure leads to activation of the activation connection.

25 In another embodiment of the invention, the activation device can be triggered remotely. As a particular preference, the activation device can be triggered in a simple mechanical way via a simple rope or a line or the like. This enables the frogmen who are unfolding the inflatable dinghy to stay outside the area which is being occupied or could be occupied  
30 by the unfolding inflatable dinghy.

In another embodiment of the invention, the inflatable dinghy is connected to one of the half-shells by a retention rope. This ensures that, after the inflatable dinghy has been inflated, the half-shell does not fall immediately to the bottom, this being advantageous

when items of equipment, e.g. oars, are still attached to the half-shells. This retention rope is then severed, preferably before the inflatable dinghy is used, in order to reliably sink the half-shell.

- 5 In another embodiment of the invention, a first half-shell can be connected to a retention rope of a submarine, and a second half-shell is connected to the first half-shell by means of a retention rope.

10 As a preferred option, the inflatable dinghy is connected to the second half-shell by a retention rope, and the first half-shell can furthermore be connected to a retention rope of a submarine, and a second half-shell is connected to the first half-shell by a retention rope. As a result, all remain initially connected until the connection between the submarine and the first half-shell and between the inflatable dinghy and the second half-shell are then severed.

15 In another embodiment of the invention, the capsule has a positive buoyancy. This ensures that the capsule rises reliably but not too quickly and thus in an uncontrolled manner.

20 In another embodiment of the invention, the half-shells are composed of aluminium. According to the invention, this also includes aluminium alloys and aluminium composites.

25 In another embodiment of the invention, at least one half-shell has holders for equipment on the outside. Examples of items of equipment arranged there are, in particular, paddles, oars and the like.

30 In another embodiment of the invention, at least one half-shell has at least one buoyancy element. After release from the other half-shell and the inflatable dinghy, the half-shell with the buoyancy element has a negative buoyancy. By virtue of the resulting negative buoyancy, the half-shell with the buoyancy element falls to the bottom and thus prevents subsequent discovery. A foam can preferably be used as the buoyancy element.

In another embodiment of the invention, the capsule has a leaktightness sensor, wherein the leaktightness sensor is arranged in the lower half-shell but not at the lowest point of the lower half-shell. The lowest point is unsuitable since then even small quantities of condensed water could incorrectly indicate a leak. In general, the leaktightness sensor is a moisture sensor, which checks for the presence of water, e.g. via conductivity.

In another embodiment of the invention, the capsule has reinforcing elements. The reinforcing elements can be embodied as frames or stringers, for example. The capsule is preferably resistant to diving pressure to a maximum diving depth of the submarine of at least 100 m, which corresponds to an excess pressure of  $10^6$  Pa from the outside. As a further preference, the capsule is resistant to diving pressure to a maximum diving depth of the submarine of at least 300 m, which corresponds to an excess pressure of  $3 \cdot 10^6$  Pa from the outside. As a particular preference, the capsule is preferably resistant to diving pressure to a maximum diving depth of the submarine of at least 500 m, which corresponds to an excess pressure of  $5 \cdot 10^6$  Pa from the outside. A pressure resistance of more than  $10^7$  Pa, which corresponds to a diving depth of about 1000 m, is not generally necessary since the submarines which are employed at diving depths greater than 1000 m are not usually designed for deploying special forces.

In another aspect, the invention relates to a method for deploying special forces with an inflatable dinghy from a submarine according to the invention by means of a capsule according to the invention. The method comprises the following steps:

- a) outward transfer of special forces,
- b) climbing of the special forces to the surface of the water,
- c) deploying the capsule from the storage region of the submarine, such that the capsule is held on the retention rope in the vicinity of the surface of the water but fully below the surface of the water, wherein step c) takes places independently of steps a) and b) but is ended before the conclusion of step b),
- d) further rising of the capsule to the surface of the water,
- e) activation of the inflation device by means of the activation device arranged on the outside of the capsule,
- f) separation of the retention rope between the submarine and the capsule before, during or after steps d) and e).

The outward transfer of special forces in step a) and the climbing of the special forces to the surface of the water in step b) can take place in any desired manner. The deployment of the capsule in step c) takes place in a manner that is decoupled from the behaviour of the special forces in terms of time. The only important point is that the capsule assumes a position just below the surface of the water before, at the same time as or shortly after the special forces. In the context of this invention, "shortly" means a period of time within 0 to 10 minutes, preferably 0 to 5 minutes, particularly preferably 0 to 2 minutes. As a result there is no risk of detection due to objects on the surface of the water. At the same time, the dwell time of the special forces after surfacing is minimized.

"In the vicinity of the surface of the water" is preferably understood to mean the region from the surface of the water to 20 m, particularly preferably to 10 m, below the surface of the water.

The further rise of the capsule to the surface of the water in step d) can be accomplished by additional controlled pay-out of retention rope by the submarine. This is preferred since it allows particularly controlled surfacing. Alternatively, the capsule can be brought to the surface of the water by cutting of the retention rope, either by the submarine or by the special forces on the capsule. The aim is to coordinate the timing of the surfacing of the capsule and the surfacing of the combat frogmen, such that it is within the narrowest possible time window. To minimize the risk to the combat frogmen as the capsule surfaces, the capsule can be brought to the surface of the water shortly before the combat frogmen reach the surface of the water.

In step e), the inflation device is activated by means of the activation device arranged on the outside of the capsule, preferably by the special forces. This enables triggering to take place when all these special forces have assumed a safe position relative to the capsule on the surface.

Alternatively, activation of the inflation device can take place immediately after the surface of the water is reached, as is the case with life rafts, for example. However, the disadvantage of this is that special forces may be present in the region of the unfolding inflatable dinghy.

In another embodiment of the invention, activation in step e) takes place at a distance of 5 m to 25 m.

- 5 In another embodiment of the invention, items of equipment mounted externally on the half-shells are brought into the inflatable dinghy after the inflation of the inflatable dinghy following activation in step e).

- 10 In another embodiment of the invention, a connection between the inflatable dinghy and the half-shells is separated after the inflation of the inflatable dinghy following activation in step e). As a result, the half-shell or both half-shells, if they are connected to one another, are sunk. This avoids a situation where the half-shells may betray the position of the submarine or the presence of the special forces.

- 15 In another embodiment of the invention, activation in step e) is accomplished by the special forces connecting a gas cartridge, in particular a CO<sub>2</sub> cartridge, to the activation device and activating it in such a way that the CO<sub>2</sub> cartridge discharges gas and applies an excess pressure to the activation device, triggering the activation device. The advantage is that CO<sub>2</sub> cartridges are easy to use, have good storage-life characteristics and do not require a complex trigger mechanism. For example, the CO<sub>2</sub> cartridge can be  
20 connected to the activation device, in particular an activation connection of the activation device, via a hose. It is thereby possible to ensure a safe distance between the special forces and the capsule.

- 25 In another embodiment of the invention, the inflatable dinghy is not inflated symmetrically; instead, buoyancy elements in the region of the engine and then buoyancy elements which are further away from the engine are first of all inflated. This ensures that the relatively heavy engine can be reliably held above water after the opening of the capsules. Alternatively, it is also possible to use additional floats to prevent the heavy components, e.g. the engine, from sinking too far. The buoyancy components are then mounted on the  
30 components themselves or in the inflatable dinghy in the region of the heavy components.

In another embodiment of the invention, the holding in step c) takes place in a range of 0.5 m to 10 m below the surface of the water, preferably in a range of 1 m to 5 m below

the surface of the water. This ensures that, even in a wave trough, the capsule is reliably below the surface of the water but at a depth which frogmen can still reach. Moreover, the remaining distance to rise is short, and therefore surfacing takes place in a particularly controlled manner.

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The system according to the invention comprising a submarine and a capsule is explained in greater detail below by means of an exemplary embodiment illustrated in the drawings.

Fig. 1 capsule in the submarine

10 Fig. 2 capsule below the surface of the water

Fig. 3 capsule on the surface of the water

Fig. 4 inflatable dinghy ready for use

Fig. 5 cross section of the capsule

Fig. 6 cross section of the capsule in the storage region

15 Fig. 7 longitudinal section of the capsule

The illustrations are schematic and not true to scale.

Fig. 1 to Fig. 4 show the launching of an inflatable dingy 50 from a submarine 10 by  
20 means of a capsule 40.

In Fig. 1, the capsule 40 is in the storage region 30 of the submarine 10. The storage region 30 is situated above and outside the pressure hull 20, below the outer skin. In the tower, the submarine 10 has a lock 80, for example. A weapon tube 70 is arranged in the  
25 bow. Special forces can enter the surrounding water and get to the surface of the water 90 from the pressure hull through the lock 80 and/or the weapon tube 70.

Arranged in the storage region 30 is a pay-out device 100 for a retention rope 110, wherein the retention rope 110 is connected to the capsule 40.

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Of course, the submarine 10 can also have a plurality of storage regions 30, e.g. two or four. It is likewise also possible for two capsules 40 to be arranged in a storage region 30.

Fig. 2 shows the state after the opening of the storage region 30 and the deployment of the capsule 40. The capsule 40 is deliberately held just below the surface of the water 90, e.g. 10 m below the surface of the water 90, by means of the retention rope 110. Once the special forces are in position, the capsule 40 can be brought to the surface of the water 90, as shown in Fig. 3.

On the surface of the water 90, the inflatable dinghy 50 is unfolded, and the capsule 40 is thereby opened and the half-shells 60 are sunk, as shown in Fig. 4. The submarine 10 likewise has its connection to the retention rope 110 cut, can close the storage region 30 and sail away.

Particularly through retention below the surface of the water 90, as shown in Fig. 2, and the automatic unfolding of the inflatable dinghy 50, as shown in Fig. 4, the dwell time on the surface of the water 90 can be minimized, and thus the likelihood of discovery can be minimized.

A cross section through the capsule 40 is shown in Fig. 5. The capsule 40 consists of two half-shells 60, which each have a connecting region 120, via which the two half-shells 60 are connected to one another in a sealed manner. An inflatable dinghy 50 in a compacted, uninflated form but with a mounted outboard motor and a full tank of fuel is stored in the interior of the capsule 40.

Fig. 6 shows the storage region 30 with the capsule 40 in cross section. The storage region 30 can be opened by means of the hatch 140 in order to release the capsule 40. In the stored state, a clamp device 130, consisting, for example, of four clamping devices, holds the capsule 40. Here, the pay-out device 100 is in the form of a drum and can pay out the retention rope 110 in a controlled manner. By locking the drum of the pay-out device 100, it is possible in this way to hold the capsule 40 at any desired depth. The pay-out device 100 is preferably controlled from the interior of the pressure hull 20.

Fig. 7 shows a longitudinal section through the capsule 40. The inflatable dinghy 50 can be inflated by means of an inflation device 150, which is connected for this purpose to a compressed air reservoir 170. The inflation device 150 is triggered by means of the

activation device 160, by means of which a CO<sub>2</sub> cartridge, for example, can be inserted from the outside and in this way the inflation device 150 can be activated.

#### Reference signs

|    |     |                          |
|----|-----|--------------------------|
| 5  | 10  | submarine                |
|    | 20  | pressure hull            |
|    | 30  | storage region           |
|    | 40  | capsule                  |
|    | 50  | inflatable dinghy        |
| 10 | 60  | half-shell               |
|    | 70  | weapon tube              |
|    | 80  | lock                     |
|    | 90  | surface of the water     |
|    | 100 | pay-out device           |
| 15 | 110 | retention rope           |
|    | 120 | connecting region        |
|    | 130 | clamp device             |
|    | 140 | hatch                    |
|    | 150 | inflation device         |
| 20 | 160 | activation device        |
|    | 170 | compressed air reservoir |

## Patent claims

1. Submarine (10) having a device for the covert deployment of an inflatable dinghy (50), wherein the device has a storage region (30) arranged outside the pressure hull (20) of the submarine (10), wherein the storage region (30) is designed for the storage and discharge of a pressure-resistant capsule (40), wherein the capsule (40) is designed to accommodate an inflatable dinghy (50), wherein the capsule (40) is of cylindrical design, wherein the capsule (40) has two half-shells (60), wherein the half-shells (60) have a flat connecting region (120), wherein the storage region (30) has a clamp device (130), wherein the clamp device (130) is designed to fix the capsule (40), wherein the clamp device (130) makes contact with the capsule (40) in the connecting region (120) of the half-shells (60), wherein the storage region (30) and the capsule (40) are connected to one another by a retention rope (110), wherein the storage region (30) has a pay-out device (100) for the controlled pay-out of the retention rope (110).
2. Submarine (10) according to Claim 1, **characterized in that** the pay-out device (100) has a holding device, wherein the holding device is designed to prevent the paying out of the retention rope (110) against the buoyancy of the capsule (40).
3. Submarine (10) according to one of the preceding claims, **characterized in that** the pay-out device (100) is a drum, wherein the length of retention rope (110) which is payed out via the drum is detected by detecting the drum rotations, wherein the rotation of the drum can be locked to maintain a maximum length of the retention rope (110) to be payed out.
4. Submarine (10) according to one of the preceding claims, **characterized in that** the clamp device (130) has at least four clamping devices, wherein at least two are arranged on each of the two sides of the capsule (40), wherein the clamp device (130) is designed for the simultaneous release of all the clamping devices.
5. Capsule (40), wherein the capsule (40) is designed to accommodate an inflatable dinghy (50), wherein the capsule (40) is of cylindrical design, wherein the capsule (40) has two half-shells (60), wherein the half-shells (60) have a flat connecting region (120), wherein the capsule (40) has an inflation device (150) for the

inflatable dinghy (50), wherein the inflation device (150) has an activation device (160) arranged on the outside of the capsule (40), wherein the connection between the half-shells (60) is designed to be released by the inflation of the inflatable dinghy (50) in the capsule (40).

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6. Capsule (40) according to Claim 5, **characterized in that** the activation device (160) has an activation connection.

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7. Capsule (40) according to Claim 6, **characterized in that** the activation device (160) has a securing device, wherein the securing device must be turned over or removed to reach the activation connection.

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8. Capsule (40) according to one of Claims 6 to 7, **characterized in that** the activation device (160) can be triggered remotely.

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9. Capsule (40) according to one of Claims 5 to 8, **characterized in that** the inflatable dinghy is connected to one of the half-shells (60) by a retention rope (110).

10. Capsule (40) according to one of Claims 5 to 9, **characterized in that** a first half-shell (60) can be connected to a retention rope (110) of a submarine (10), wherein a second half-shell (60) is connected to the first half-shell (60) by means of a retention rope (110).

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11. Capsule (40) according to one of Claims 5 to 10, **characterized in that** the capsule (40) has a leaktightness sensor, wherein the leaktightness sensor is arranged in the lower half-shell (60) but not at the lowest point of the lower half-shell (60).

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12. Method for deploying special forces with an inflatable dinghy (50) from a submarine (10) according to one of Claims 1 to 4 by means of a capsule (40) according to one of Claims 5 to 11, wherein the method comprises the following steps:

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- a) outward transfer of special forces,
- b) climbing of the special forces to the surface of the water (90),
- c) deploying the capsule (40) from the storage region (30) of the submarine (10), such that the capsule (40) is held on the retention rope (110) in the vicinity of the surface of the water (90) but fully below the surface of the water (90),

wherein step c) takes places independently of steps a) and b) but is ended before the conclusion of step b),

d) further rising of the capsule (40) to the surface of the water (90),

e) activation of the inflation device (150) by means of the activation device (160) arranged on the outside of the capsule (40),

f) separation of the retention rope (110) between the submarine (10) and the capsule (40) before, during or after steps d) and e).

13. Method according to Claim 12, **characterized in that** a connection between the inflatable dinghy (50) and the half-shells (60) is separated after the inflation of the inflatable dinghy (50) following activation in step e).

14. Method according to one of Claims 12 to 13, **characterized in that** activation in step e) is accomplished by special forces activating the capsule by means of a mechanical, pneumatic or hydraulic device.

15. Method according to one of Claims 12 to 14, **characterized in that** the holding in step c) takes place in a range of 0.5 m to 10 m below the surface of the water, preferably in a range of 1 m to 5 m below the surface of the water.