

From Freighters to Flying Boats

Traveling the high seas in the STAR FRONTIERS® game

by Matthew M. Seabaugh

In the STAR FRONTIERS® Alpha Dawn game rules, land travel is covered extensively. Air travel is also given its fair share of coverage in both the Alpha Dawn and *Zebulon's Guide to Frontier Space* rules. But when you reach the beach, you're stranded. Hovercraft can travel over calm water for a good distance—but after that, what's left?

This article fills the gap by describing several types of surface vessels, a few underwater craft, and some amphibious aircraft. The vessels detailed herein are essentially generic creations; referees may create variations on these for their own campaign worlds. Sea movement and combat are also covered.

Surface vessels

Ski cycle

Cost: 2,000 Cr (rental: 25 Cr down + 25 Cr/day)

Top/cruise speed: 150/90 KPH

Passengers: 2

Cargo: .5 cubic meter

Parabattery: Type 1

Hull size: A

Bump number: 1

Notes: Similar in size to a land cycle, a ski cycle has an engine resembling a jet engine that uses water as the propellant. This vessel is very maneuverable and can travel in extremely shallow water.

Motorboat

Cost: 6,000 Cr (rental: 50 Cr down + 25 Cr/day)

Top/cruise speed: 120/80 KPH (15/10 KPH w/sail)

Passengers: 6

Cargo: 200 kg, 1 cubic meter

Parabattery: Type 2

Hull size: B

Bump number: 3

Notes: This is an outboard-motor craft capable of high speeds and quick maneuvering. The price includes a collapsible sail. Motorboats can maneuver in waters one meter or more in depth. A special enclosed-canopy version may be purchased, or the canopy can be added later; the canopy makes a motorboat more streamlined and, hence, faster. Any motorboat with an enclosed canopy has a top speed of 140 KPH. As the canopy is made of canvaslike material, it does not serve as armor.

Yacht (cabin cruiser)

Cost: 75,000 Cr

Top/cruise speed: 100/60 KPH

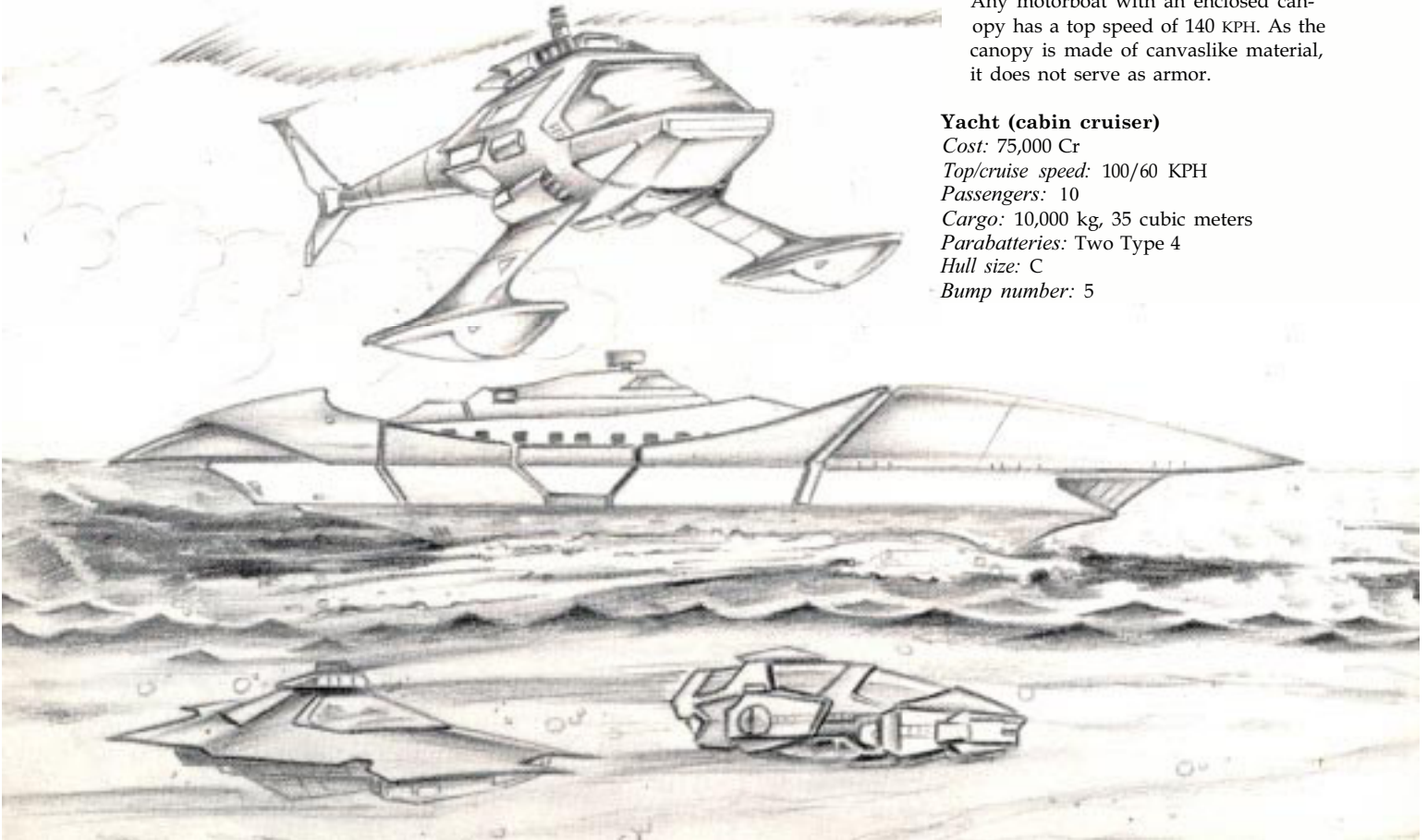
Passengers: 10

Cargo: 10,000 kg, 35 cubic meters

Parabatteries: Two Type 4

Hull size: C

Bump number: 5



Notes: This large ship has enclosed cabins with bunks, cooking facilities, and bathrooms. Many yachts have extravagant cabins for the owner or captain. These ships are favorites among the rich and powerful for their plushness and speed. Yachts are used in deep water, using small rowboats for boarding and disembarking. Yachts and larger ships may be modified to use tow lines. Any vessel of hull size C or D may have a towline on board that can be used to pull disabled ships. A ship may pull any ship the same size or smaller than itself at one-half cruise speed.

Transport ship

Cost: 200,000 Cr
Top/cruise speed: 95/55 KPH
Passengers: 10/30
Cargo: 72,500 kg, 24 cubic meters/7,500 kg, 8 cubic meters
Parabatteries: Four Type 4
Hull size: D
Bump number: 7

Notes: There are two types of this vessel, the workhorse of surface fleets. The first type is the cargo transport, detailed by the first set of figures; the second is the passenger transport, detailed by the second set of figures. Transports are deep-water craft and use rowboats to shuttle crewmen to and from shore in the absence of a dock. Transports may have towlines.

Submersible vessels

Minisub

Cost: 50,000 Cr (rental: 200 Cr down + 100 Cr/day)
Top/cruise speed: Surfaced—100/60 KPH, submerged—85/45 KPH
Passengers: 4
Cargo: 300 kg, 3 cubic meters
Parabatteries: Two Type 2
Hull size: C

Bump number: 5

Notes: This is a personal vessel, used often in underwater communities as a car would be used on land. Some are fitted with harvesting equipment for use on Kelp farms. Others are used as exploration vessels. Most underwater communities have several of these vessels for the maintenance of habitat walls, as well as for rescue or police vessels. Minisubs carry enough life support for 72 hours before they need to resurface. Additional units of life support may be purchased to increase this time to 120 hours.

Transport submarine

Cost: 20,000 Cr
Top/cruise speed: Surfaced—90/50 KPH, submerged—70/40 KPH
Passengers: 6/20
Cargo: 50,000 kg, 18 cubic meters/5,000 kg, 5 cubic meters
Parabatteries: Four Type 4
Hull size: D
Bump number: 7

Notes: Like the transport ship, there are two versions of this vessel: the cargo transport (first set of statistics) and the passenger transport (second set of statistics). Transport subs carry enough life support for 96 hours. Additional units of life support can be purchased to increase the time to 144 hours.

Amphibious aircraft

Amphibian aircar

Cost: 55,000 Cr (rental: 100 Cr down + 100 Cr/day)
Top/Cruise speed: 875/400 KPH
Passengers: 4
Cargo: 750 kg, 2 cubic meters
Parabattery: Type 4
Notes: This is an adapted version of a typical aircar. Its underside and wings

have pontoons to keep the craft afloat. These craft are often used in swamps and near underdeveloped islands.

Amphibian air transport

Cost: 125,000 Cr
Top/cruise speed: 700/250 KPH
Passengers: 3-12
Cargo: 9,500 kg, 40 cubic meters
Parabatteries: Two Type 4

Notes: This is an adapted version of an aircraft, the air transport. It can be used either as a passenger transport or a freight transport.

Amphibian jet copter

Cost: 45,000 Cr
Top/cruise speed: 325/50 KPH
Passengers: 4
Cargo: 350 kg, 5 cubic meters
Parabattery: Type 4

Notes: This, too, is an adapted aircraft. It rests on two pontoons where skids are usually positioned. It is often used in sea rescues and for tracking criminals in swamps and bogs.

Sea-vessel movement

In general, surface-vessel movement is similar to land-vehicle movement, while submarine movement is much like aerial movement. The rules for acceleration, deceleration, maximum speed, backing up, and turn speed are the same as in the Alpha Dawn expanded rules, page 30. See Table 1 for surface-vessel data.

Special maneuvers: Unusual actions may be performed as follows:

1. All ships can perform bumps and slips (as per the Alpha Dawn expanded rules, pages 30-31), as well as short corners (see the following text).

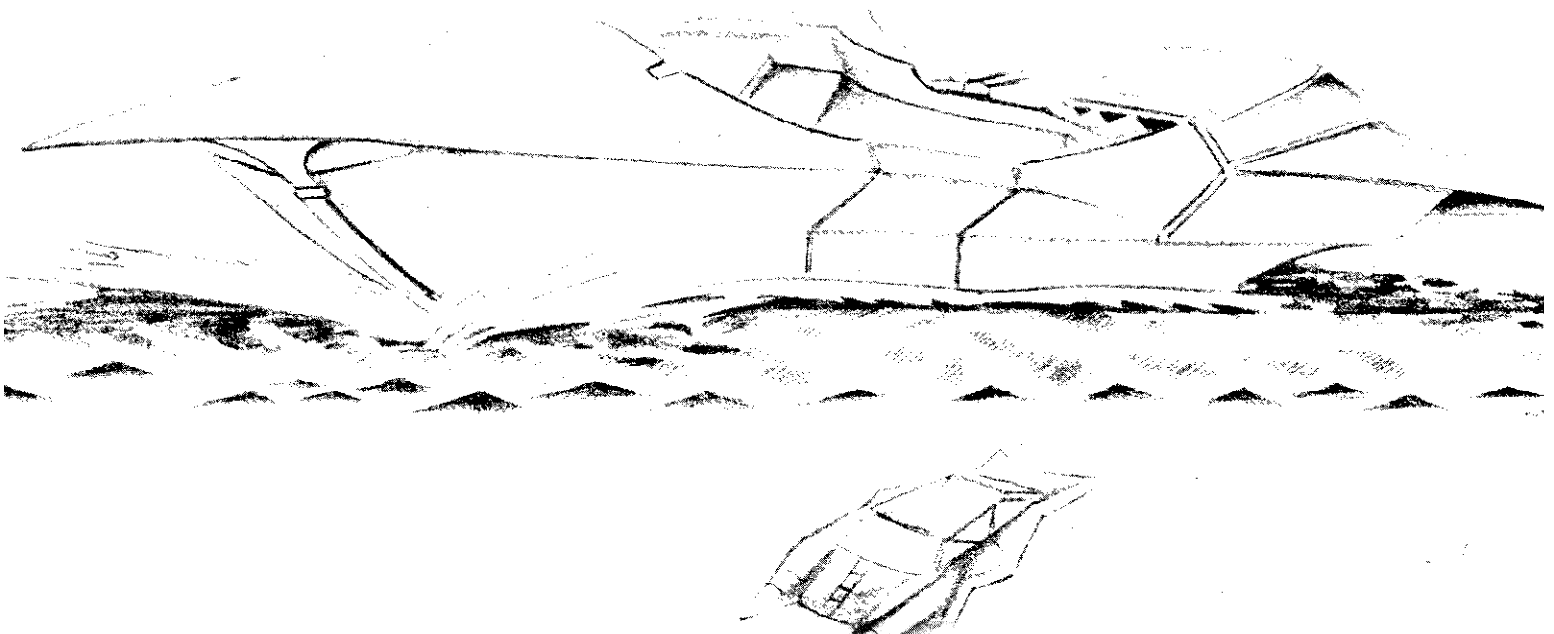


Table 1
Surface Vessel Data
(statistics are in meters/turn)

Hull Vessel	size	Acceleration	Top Deceleration	Turning speed	speed
Ski cycle	A	100	40	250	100
Motorboat	B	70	40	200	80
Yacht	C	60	40	170	60
Transport ship	D	40	30	160	40
Minisub*	C	70	40	170	60
Transport sub*	D	40	30	160	40

Only surface movement shown.

Table 3
Hull Damage Results

Points of damage	Result
2-15	No effect
16	Current speed reduced by 20 KPH
17	Current speed reduced by 30 KPH
18	Acceleration reduced by 20 meters/turn
19	Deceleration reduced by 20 meters/turn
20	Top speed reduced by 20 KPH
21-25	5% chance of sinking (cumulative per turn)
26-30	10% chance of sinking (cumulative per turn); add 3 to next damage roll on this table
31-33	30% chance of sinking (cumulative per turn); add 6 to next damage roll on this table
34-36	50% chance of sinking (cumulative per turn); add 9 to next damage roll on this table
37+	70% chance of sinking (cumulative per turn); add 12 to next damage roll on this table

2. Only ships of hull size C or smaller can perform skid turns as well as the other maneuvers. However, yachts must attain a speed of at least 90 meters/turn to accomplish a skid turn.

3. Other special maneuvers, such as stunts, are up to the referee's discretion to use and define.

Short corners: Any ship may attempt a short corner, but this is especially dangerous on the open sea. If the character performing the short corner doesn't make his Reaction Speed check (Alpha Dawn expanded rules, page 31), there is a 15% chance the ship will capsize. If the ship doesn't capsize, roll 1d100 and add the ship's current speed in meters/turn, then apply the total to Table 2.

Collisions: If a vessel strikes an object above the waterline, treat the collision as per the Alpha Dawn expanded rules, page 31. However, if the object is struck below the waterline, there is a 1% chance per meter/turn of the vessel's speed that the vessel will take on water. Unless repaired by technicians with a total of four levels of Technician skill, the ship sinks. A ski cycle

sinks in five minutes, a motorboat or minisub in 10 minutes, a yacht in 15 minutes, and transport ships and subs in 20 minutes.

When submerged, submarines may make up to six 45° turns in one minute (one such movement per game turn). These turns may be made in succession or at different times during the minute. If a sub is at a dead stop, it may turn to face any direction before moving. A sub may also increase or decrease its depth by 30 meters/minute to a maximum depth of 600 meters.

Sea-vessel combat

The rest of this article is written in terms of the Alpha Dawn expanded rules. Conversion to the *Zebulon's Guide* system should be fairly simple and is left to the referee.

Surface combat

A ship is divided into two parts for the purposes of this article: the hull and the superstructure. The hull is the part of the ship below the water line; the superstruc-

Table 2
Surface Vessel Control

Speed (meters/turn)	Result
2-79	Speed reduced by 20 meters/turn
80-139	Speed reduced by 50 meters/turn
140-199	Decks awash
200-259	Engine flooded
260+	Capsized

ture is the part above the water line.

If a ship's hull is hit, the damage will affect the speed of the ship or cause the ship to sink. If the ship's superstructure is hit, the direction, speed, or communications will be affected: fires may break out, and the ship might capsize.

There are three types of combat between ships: *contact combat*, which includes ramming, bumping, and boarding; *ranged combat*, which involves both personal and mounted weapons; and *explosives*. The same three types of combat also apply to submerged combat, with some modifiers.

Contact combat: Bumping between two ships is similar to bumping between two land vehicles, but the sizes of the vessels involved are much more influential in sea combat than in land combat. To apply this factor, a system is used similar to the "bump number" system from Matt Brady's article, "Here Comes the Cavalry!" in DRAGON® issue #120. When a bumping situation occurs, the referee finds the difference between the two vessels' bump numbers and multiplies it by five. This number is added to the Reaction Speed of the pilot of the ship with the higher bump number and subtracted from the Reaction Speed of the pilot of the other vessel. The referee now rolls a 1d100 check for each pilot's revised Reaction Speed score. A successful roll indicates the pilot has maintained control of his ship, while a failed roll indicates the pilot of the ship has lost control of his vessel. When a pilot loses control, roll 1d100 and add his vessel's current speed in meters/turn, then apply this result to Table 2.

Ramming is a bit different. Both ships are damaged in a successful ramming attempt, not just the defender. When a ramming attempt is made, each pilot must roll 1d100, add his Reaction Speed, add his ship's bump number multiplied by three, then subtract his opponent's speed in meters/turn. If the attacker's total is higher than the defender's, the ramming attempt is successful.

If the ramming attempt succeeds, both ships are damaged. Damage is calculated by taking the attacker's speed in meters/turn, dividing that figure by 10, then adding the result to the attacker's bump

number multiplied by three. The total is applied to Table 3 for the results. Damage to the attacker is figured in the same way, substituting only the defender's bump number for the attacker's bump number.

Boarding is the movement of the crew of one ship to another ship for hand-to-hand and ranged-weapon combat. This usually causes little or no damage to either the attacker's or the defender's ship. Even so, boarding can be the trickiest of any of the combat combat maneuvers.

Two requirements must be met for boarding to take place. First, the ships must have the same speed and heading for three turns prior to boarding, and must be at most 10 meters apart. Second, at least three grappling hooks must connect the two ships. Grappling hooks are treated as thrown weapons for purposes of determining the success or failure of the grappling attempt.

After all these criteria are met, characters may climb across the ropes to the opponent's ship. The climb takes three turns at most. A climber hit by weapons fire must make a dexterity check or else fall into the sea. After a character boards his opponent's ship, combat proceeds as usual.

For obvious reasons, boarding between high-powered ships is rarely used except against stationary ships or under extreme circumstances.

Weapons combat: There are two sorts of weapons used between seafaring vessels: personal weapons and mounted weapons. Usual ranged-weapon procedures are used for personal weapons, with these additional modifiers to hit:

- 1 Attacker on hull size A or B ship: - 10
- 1 Target ship is hull size C: +5
- 1 Target ship hull size D: + 10
- 1 Aiming below the water line: -20

Shots fired by personal weapons hit the superstructure of the target ship only, unless intentionally aimed below the waterline. Then the attacker suffers the aforementioned penalty.

When a hit is scored, the attacker rolls 2d10 and adds the number of dice of damage inflicted. This number is applied to Table 4 unless the hit was intentionally aimed at the hull, in which case the number is applied to Table 3. Note that these effects only apply to relatively small ships with little or no armor, as would be found on most colony worlds. Shooting at a really large ship, like an aircraft carrier, is an exercise in futility (and probably in suicide as well).

The number and type of mounted weapons a ship may have depends on the ship's size and ship type. Ski cycles may only have forward-firing laser pistols. Motorboats may have any type of rifle mounted on a swivel mount. Transports may have up to four heavy weapons mounted on swivel mounts.

Mounted weapons are subject to the same modifiers as personal weapons, including the previously given modifiers

for target hull size and aiming below the waterline.

Explosives: These come in three different types: thrown explosives, placed explosives, and mines.

Thrown explosives, as well as grenades, are treated as ranged weapons and use the same modifiers.

Placed explosives, used often in espionage or ambushes, can be put inside or outside the ship. Determine whether or not the blast will count as either superstructure damage or hull damage, given its location. Getting the explosives to the ship without detection is the tricky part.

Mines are often used to guard harbors and military installations. Mines are often stationary, although some may break loose, floating freely. If a ship strikes a mine, treat it as 10 dice of damage applied to Table 3.

Undersea combat

A submarine is a versatile vessel able to fight either on the surface or underwater. When a submarine is surfaced, it follows the same surface rules as other ships. When submerged, the submarine follows a new set of guidelines.

There are three different types of underwater vessel combat: *contact combat*, *torpedo combat*, and *explosives combat*.

Contact combat underwater is similar to surface contact combat. The same three basic maneuvers are used: bumping, ramming, and boarding. A bump maneuver exerted underwater uses the following modifications: The submarine maneuvers in a three-dimensional environment, meaning bumps can be inflicted from the top or bottom. A bump from above grants a +5 to rolls on Table 6 made to see if the bumped vessel keeps control. In addition, maneuvering undersea is no mean feat. Most of the maneuvering of the sub is done by relying upon the onboard computers; you cannot maneuver a sub underwater by sight.

Ramming underwater uses the same mechanics as surface ramming, with the following modifiers. First, speed is divided by five rather than ten. Second, if a ship is descending in depth as it is ramming, five additional points of damage are done to the defender, and five fewer points of damage are done to the attacker. All such damage is applied to Table 7.

Underwater boarding is usually done on rescue missions rather than in combat, as it is tricky. Any men attempting to board during combat must come through the air locks, so they are easy targets for the men inside. Hence, most boarding actions against submarines take place on the surface against engine-damaged subs; holes must be cut in the enemy's hull to enter at different places. Many ships simply sink obstinate submarines rather than board them.

Underwater weapons combat uses torpedoes—self-propelled undersea missiles approximately four meters long. Most

**Table 4
Superstructure Damage Results**

Modified die roll	Result
2-15	No effect
16	Radio knocked out
17	Steering jammed right
18	Steering jammed left
19	Steering jammed straight
20-24	Decks awash
25-29	Engine flooded
30-33	Fire
34+	Capsized

**Table 5
Submarine Control: Surfaced**

Speed (meters/turn)	Result
0-79	Speed reduced by 20 meters/turn
80-139	Speed reduced by 50 meters/turn
140-199	Decks awash
200-259	Hold flooded
260 +	Capsized

**Table 6
Submarine Control: Submerged**

Speed (meters/turn)	Result
0-50	Speed reduced by 20 meters/turn
51-100	Depth reduced by 30 meters
101-150	Forced surfacing
151+	Ballast tanks crushed

**Table 7
Submarine Damage Results**

2-15	No effect
16-20	Loss of control
21-25	Acceleration reduced by 30 meters/turn
26-30	Turns -2
31-35	Forced surfacing
36+	40% chance of sinking (cumulative per turn)

torpedoes carry 150 grams (15d10 points of damage) of TD-19 that explode on impact. There are three different types of guidance systems on torpedoes. Straight-running torpedoes are the simplest, and are aimed and follow their courses for 2

km, when their fuel runs out. Acoustic torpedoes guide themselves after being fired from the sub, homing in on engine sounds from the target until they hit or run out of fuel after 2 km. The most deadly type is the wire-guided torpedo, which can be guided from the launching sub using a computer with a radio antenna. Its range is also 2 km.

Combat involving torpedoes is intense and deadly. One lucky shot may disable a ship. Deception and speed are invaluable. A minisub can carry up to four torpedoes, while a transport sub can carry up to eight. These tubes are usually divided, facing fore and aft. Straight-running torpedoes use the guidelines for mounted weapons. There is no to-hit modifier for careful aim or for the water being soft cover. Acoustic torpedoes follow the same guidelines with a +10 modifier to hit if the opponent is moving or if his engines are running. Wire-guided torpedoes are not subject to any modifiers. The only way to escape these terrors is to outrun them; they travel at 125 meters/turn for 16 turns, then detonate if they haven't hit their intended targets. Damage from a wire-guided torpedo is 2d10 + 15 points, applied to Table 7.

Explosives in submarine warfare are occasionally encountered. Some harbors contain mines at the depth that a sub would have to travel to enter the harbor

undetected. At other times, spies may board ships and sabotage them. Underwater mines each carry 100-200 grams (doing 10-20 dice of damage) of TD-19.

Results: Tables 2-7

Ballast tanks crushed: The submarine sinks toward the ocean bottom.

Capsized: The boat rolls over, and all aboard take 2d10 points of damage if outside the ship or 3d10 points if inside (C and D hull sizes only). In addition, anyone inside a C- or D- size ship when it capsizes has a 25% chance of being trapped in an air pocket with 1d10 x 10 minutes worth of air. This amount is divided equally among characters if more than one person is trapped.

Decks awash: The bow of the ship suddenly dives into the waves, and its decks are flooded. There is a 50% chance that any character exposed outside will be washed overboard.

Engine flooded: The engine immediately ceases to function, and the vessel slows to a stop. It takes 1d10 turns for the ship to completely stop, after which the engine will not start for 3d10 minutes.

Fire: Flames burst from a referee-determined part of the ship. Those within 10' of the blaze take one point of damage per minute. If less than 75% of the crew

helps, the fire burns an additional 1d10 minutes. For every minute the fire burns, there is a 1% cumulative chance of an explosion. If the ship explodes, the blast radii per hull size are as follows: A—50 meters; B—100 meters; C—150 meters; D—250 meters. All people within the blast radius take 7d10 points of damage; no type of screen or suit affects this damage.

Forced surfacing: The sub must immediately surface. All aboard take 5d10 points of damage, and the sub cannot submerge again until repaired, or else it sinks.

Hold flooded: Water pours into the submarine through the hatches. Speed is reduced by 20 KPH for 3-30 minutes, until the pumps can empty the ship again.

Loss of control: The submarine's speed is checked on Table 6 for the effects.

Radio knocked out: The antenna for radio communication has been downed. The antenna takes 1d10 hours to repair.

Depth reduced by 30 meters: The sub's depth is decreased by 30 meters (i.e., the sub rises, possibly reaching the surface). All aboard take 3d10 points of damage.

Sinking: If a ship has a chance of sinking, the ship has taken water into its hold. The referee rolls 1d100, and if the roll is less than or equal to the designated percentage, the ship begins to sink. A ski cycle sinks in 5 minutes; a motorboat in 10; a yacht in 15; a transport in 20. During this time, deck guns can continue to fire until one minute before sinking. If the ship doesn't sink, the appropriate modifier is applied to the next damage roll.

Speed reduced: The vessel immediately loses the indicated amount of speed unless it is over one-half of the vessel's current speed. In the latter case, the ship loses half speed at most. Any result below zero meters/turn is a full stop.

Steering jammed: If jammed straight, the vessel cannot turn. If jammed right or left, the vessel must turn 45° in the indicated direction after each 20 meters of travel. The ship can accelerate or decelerate, but it cannot change direction.

Turns - 2: The maximum number of 45° turns the submarine can make in one minute is reduced by two.

Additional notes

Ship-vs-submarine combat: Submarines almost always have the advantage of surprise against surface ships. However, they have fairly low firepower when compared to other ships of the same size. Also, surface ships are faster than subs, so escape may be difficult for a detected submarine.

A submarine must be fairly close to the surface to fire the torpedoes it carries. This means that if a sub is sighted before it fires, it can be fired upon with deck guns from the surface ships. When a torpedo strikes a surface ship, the damage is considered hull damage, and the attack gains an additional 2d10 points of damage on Table 3 to represent the surprise factor.

In addition to torpedoes, some subs have

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a recoilless rifle or heavy laser mounted on deck. This mount takes three turns to arm and may then be used as the surface-combat rules dictate.

Often, the only weapons the surface ships have available to fight submarines are depth charges. These are special charges of TD-19 set to go off at a certain depth or on contact. The base chance to hit a sub with a depth charge is 20%. If the surface ship is using sonar (1,000 Cr/km range), the chance improves to 45% as long as the sub has its engines on; if the sub shuts off its engines, the chance decreases to 35%. A sub hit by a depth charge takes $2d10 + 20$ points of damage, applied to Table 7.

Another mode of attack available to submarines is to ram ships from underneath. This is especially damaging, and the defender takes one and one half times normal damage while the sub takes normal damage. In this case, the sub rams under surface-combat rules. The damage to the surface ship is applied to Table 3, while the damage to the sub is applied to Table 7.

Escape from sinking ships: The methods of escape from vessels vary. Every seafaring vessel under UPF jurisdiction must carry a safe means of escape. Size A ships generally carry life jackets, and size B ships carry either life jackets or life bubbles. Life bubbles are zip-open plastic

spheres that can encase one passenger each, having enough air for two hours and a small snorkel for additional air if needed. They will take 5 points of damage before collapsing. Life bubbles cost 50 Cr.

Size C and D ships generally carry a life jacket for every passenger in addition to a number of lifeboats. Lifeboats are small boats that carry six people. These boats always have oars and a collapsible sail. More expensive versions may be motorized. Submarines carry an equivalent of a lifeboat, called an escape capsule, that is essentially a lifeboat that is pressurized for the depth. The capsule rises to the surface where its canopy opens and is treated thereafter as a lifeboat. Capsules may also be motorized. Capsules cost 100 Cr more than comparable lifeboats.

Lifeboat

Cost: 1,500 Cr (700 Cr w/sail)

Top/cruise speed: 100/50 KPH (15/10 KPH w/sail)

Passengers: 6

Cargo: None

Parabattery: 2

Hull size: A

Bump number: 2

Accel/Decel: 50/40 (varies w/sail)

In addition to a means of escape, all ships must have one standard sea survival pack per passenger. The contents of such

a pack are: one all-weather blanket, one first-aid pack, four survival rations (eight days of food), one compass, 10 salt pills, 10 liters of water, one flashlight, one pair of sea goggles, and an emergency beeper that emits a signal for 20 km for 48 hours. Some packs may include a small firearm.

The sea is a huge and dangerous place, full of adventure and danger. I hope this article has opened this frontier to you.

Good luck, and good sailing!

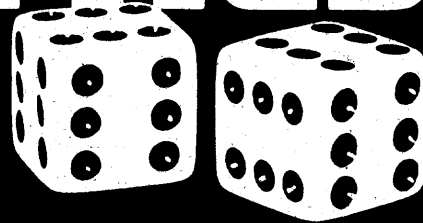
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