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**Studij Pomorske tehnologije jahta i marina**



**SKRIPTA**

**ENGLISKI JEZIK ZA 2. GODINU NA STUDIJU POMORSKE  
TEHNOLOGIJE JAHTA I MARINA**

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## 1. YACHT

**Match the words with explanations:** recreational boat, vessel, watercraft, leisure, fibreglass, carbon fibre, merchant, fleet, gaff rig, lee board

1. \_\_\_\_\_ a businessman who trades in commodities that he did not produce himself, in order to earn a profit.
2. \_\_\_\_\_ a collection of ships or vehicles, with many specific connotations.
3. \_\_\_\_\_ a rig with a fore-and-aft sail that has its upper edge supported by a gaff.
4. \_\_\_\_\_ material consisting of extremely thin fibres about 0.005–0.010 mm in diameter and composed mostly of carbon atoms.
5. \_\_\_\_\_ a boat or ship or such vessels collectively.
6. \_\_\_\_\_ a boat used for personal recreational or sometimes sporting purposes.
7. \_\_\_\_\_ a passenger or freight-carrying ship, boat.
8. \_\_\_\_\_ a material consisting of extremely fine glass fibres, used in making various products, such as yarns, fabrics, insulators, and structural objects or parts. Also called *spun glass*.
9. \_\_\_\_\_ a lifting foil used by a sailboat, much like a centreboard, but located on the leeward side of the boat.
10. \_\_\_\_\_ freedom from time-consuming duties, responsibilities, or activities.

**Fill in the gaps with the words from above:**

1. \_\_\_\_\_ are no longer common in commercially built boats, because many people consider them inelegant and awkward.
2. A \_\_\_\_\_ is a large formation of warships, and the largest formation in any navy. A \_\_\_\_\_ at sea is the direct equivalent of an army on land.
3. A wholesale \_\_\_\_\_ operates in the chain between producer and retail merchant.
4. Here's fine illustration of what is meant by the laminate being comprised of an extremely small amount of \_\_\_\_\_ reinforcement.
5. The density of \_\_\_\_\_ is also considerably lower than the density of steel, making it ideal for applications requiring low weight.

6. When it comes to purchasing a boat for \_\_\_\_\_, today's buyers are having difficulty because each time there are superior models.
7. But though it was now an old story, and the most aged people had almost forgotten that such a \_\_\_\_\_ had been wrecked, William Phips resolved that the sunken treasure should again be brought to light.
8. Agents and insurers also should discuss coverage for other small boats, including personal \_\_\_\_\_ and tenders, associated with the boating lifestyle.

## **YACHT**

A **yacht** is a recreational boat. The term originated from the Dutch *Jacht* meaning "hunt". It was originally defined as a light, fast sailing vessel used by the Dutch navy to pursue pirates and other transgressors. After its selection by Charles II of England as the vessel of choice to return to Britain from Holland for his restoration, it came to be used to convey important persons.

In modern use the term designates two rather different classes of watercraft, sailing and power boats. Yachts are different from working ships mainly by their leisure purpose, and it was not until the rise of the steamboat and other types of powerboat that sailing vessels in general came to be perceived as luxury, or recreational vessels. Later the term came to encompass motor boats for primarily private pleasure purposes as well.

Yacht lengths generally range from 20 feet (6.1 m) up to hundreds of feet. A luxury craft smaller than 40 feet (12.19 m) is more commonly called a cabin cruiser or simply "cruisers." A mega yacht generally refers to any yacht (sail or power) above 100 ft (30.5 m) and a super yacht generally refers to any yacht over 200 ft (61 m). This size is small in relation to typical cruise liners and oil tankers.

### **Construction materials and techniques**

Until the 1950s, almost all yachts were made of wood or steel, but a much wider range of materials is used today. Although wood hulls are still in production, the most common construction material is fibreglass, followed by aluminium, steel, carbon fibre, and ferrocement (rarer because of insurance difficulties). The use of wood has changed and is no longer limited to traditional board-based methods, but also include modern products such as plywood, veneers and epoxy resins. Wood is mostly used by hobbyists or wooden boat purists when building an individual boat.

## **Sailing yachts**

Sailing yachts can range in overall length (Length Over All—LOA) from about 20 ft (6 m) to well over 100 ft (30 m), where the distinction between a yacht and a ship becomes blurred. Most privately owned yachts fall in the range of about 25–45 ft (7–14 m); the cost of building and keeping a yacht rises quickly as length increases. In the U.S., sailors tend to refer to smaller yachts as sailboats, while referring to the general sport of sailing as yachting. Within the limited context of sailboat racing, a yacht is any sailing vessel taking part in a race, regardless of size.

Modern yachts have efficient sail-plans, most notably the Bermuda rig, that allow them to sail towards the wind. This capability is the result of a sail-plan and hull design.

## **History**

Yacht (from Dutch *jacht* meaning *hunting* or *hunt*) was originally defined as a light, fast sailing vessel used by the Dutch navy to pursue pirates and other transgressors around and into the shallow waters of the Low Countries. They were also used for non-military governmental roles such as customs duties and delivering pilots to waiting ships. The latter use attracted the attention of wealthy Dutch merchants who began to build private yachts so they could be taken out to greet their returning ships. Soon wealthy individuals began to use their 'jachts' for pleasure trips. By the start of the 17th century 'jachts' came in two broad categories- *speel-jachts* for sport and *oorlog-jachts* for naval duties. By the middle of the century large 'jacht' fleets were found around the Dutch coast and the Dutch states organised large 'reviews' of private and war yachts for special occasions, thus putting in place the groundwork for the modern sport of yachting. *Jachts* of this period varied greatly in size, from around 40 ft (12 m) in length to being equal to the lower classes of the ship of the line. All had a form of fore/aft gaff rig with a flat bottom and lee boards to allow operations in shallow waters. The gaff rig remained the principal rig found on small European yachts for centuries until giving way to the 'Bermudan sloop' rig in the 1960s.

*Source: <http://en.wikipedia.org/wiki/Yachting>*

## 2. CLASSIFICATION

**Match the words with explanations:** dinghy, keel, daggerboard, trailer sailer, foresail, jib, planform, galley, hop, berth

1. \_\_\_\_\_ a short trip, especially by air.
2. \_\_\_\_\_ a bed or bunk in a vessel or train, usually narrow and fixed to a wall.
3. \_\_\_\_\_ the kitchen of an airliner, ship, or camper.
4. \_\_\_\_\_ a three-cornered sail on the front mast of a ship.
5. \_\_\_\_\_ the outline or silhouette of an object, esp an aircraft, as seen from above.
6. \_\_\_\_\_ a small yacht or large dinghy style of sailboat that is moved to sailing locations and stored on a road trailer.
7. \_\_\_\_\_ one of a few different types of sail set on the foremost mast (foremast) of a sailing vessel.
8. \_\_\_\_\_ a removable centreboard on a small sailboat that can be lowered into the water to serve as a keel.
9. \_\_\_\_\_ a small open boat carried as a tender, lifeboat, or pleasure craft on a larger boat.
10. \_\_\_\_\_ the principal structural member of a ship, running lengthwise along the centre line from bow to stern, to which the frames are attached.

**Fill in the gaps with the words from above:**

1. If you're short on space and need a small \_\_\_\_\_ then you've come to the right place! If easy storage, light weight, stability and the ability to row, motor or sail is high on your list of priorities look no further.
2. It stood in a small side room which looked out across a narrow grass plot toward the shed, where there was a disabled boat lying \_\_\_\_\_ upward.
3. Many people are confused about the pros and cons of \_\_\_\_\_ versus keels.
4. Points to consider when looking for or buying a \_\_\_\_\_ or small yacht capable of being towed.
5. After raising the mainsail and adjusting the sheets, you'll need to raise your \_\_\_\_\_ - called a jib or a genoa - to achieve your boat's full potential.
6. The HISPANIOLA was under her main-sail and two \_\_\_\_\_, and the beautiful white canvas shone in the sun like snow or silver.

7. \_\_\_\_\_ determines the characteristics of the wing.
8. Six months in the \_\_\_\_\_ heat had effected some sort of a change in the wine.
9. They \_\_\_\_\_ over to Los Roques for the day.
10. The lamp drops and frightens Jonah; as lying in his \_\_\_\_\_ his tormented eyes roll round the place.

## **History**

Charles II of England spent part of his time in exile during the period of the Commonwealth of England in the Netherlands and became keen on sailing. He returned to England in 1660 aboard a Dutch yacht. During his reign Charles commissioned 24 Royal Yachts on top of the two presented to him by Dutch states on his restoration. As the fashion for yachting spread throughout the English aristocracy yacht races began to become common. Other rich individuals in Europe built yachts as the sport spread. Yachting therefore became a purely recreational form of sailing with no commercial or military function (for example, the Cox & King yachts at the beginning of the 20<sup>th</sup> Century), which still serves a broad definition of both the sport and of the vessel.

## **CLASSIFICATIONS**

### **Day sailing yachts**

Day sailing yachts are usually small, at under 20 ft (6 m) in length. Sometimes called dinghies, they often have a retractable keel, centerboard, or daggerboard. Most day sailing yachts do not have a cabin, as they are designed for hourly or daily use and not for overnight journeys. At best they may have a 'cubby', where the front part of the hull has a raised solid roof to provide a place to store equipment or to offer basic shelter from wind or spray.

### **Weekender yachts**

Weekender yachts are slightly larger, at under 30 ft (9.5 m) in length. They often have twin keels or lifting keels such as in trailer sailers. This allows them to operate in shallow waters, and if needed "dry out"—become beached as the tide falls. The hull shape (or twin-keel layout) allows the boat to sit upright when there is no water. Such boats are designed to undertake short journeys, rarely lasting more than 2 or 3 days (hence their name). In coastal areas, long trips may be undertaken in a series of short hops. Weekenders usually have only a simple cabin, often consisting of a single "saloon" with bedspace for two to three people. Clever use of ergonomics allows space in the saloon for a galley (kitchen), seating, and



navigation equipment. There is limited space for stores of water and food. Most are single-masted "Bermuda sloops" (not to be confused with the type of traditional Bermudian ship known as a Bermuda sloop), with a single foresail of the jib or genoa type and a single mainsail (one variation of the aforementioned Bermuda rig). Some are gaff rigged. The smallest of this type, generally called *pocket yachts* or *pocket cruisers*, and *trailer sailers* can be transported on special trailers.

**Cruising yachts** Cruising yachts are by the far the most common yacht in private use, making up most of the 25 to 45 ft (7 to 14 m) range. These vessels can be quite complex in design, as they need a balance between docile handling qualities, interior space, good light-wind performance and on-board comfort. The huge range of such craft, from dozens of builders worldwide, makes it hard to give a single illustrative description. However, most favour a teardrop-planform hull, with a wide, flat bottom and deep single-fin keel to give good stability. Most are single-masted Bermuda rigged sloops, with a single fore-sail of the jib or Genoa type and a single mainsail. Spinnaker sails, in various sizes, are often supplied for down-wind use. These types are often chosen as family vessels, especially those in the 26 to 40-foot (8 to 12 m) range. Such a vessel will usually have many cabins below deck. Typically there will be three double-berth cabins; a single large saloon with galley, seating and navigation equipment; and a "head" consisting of a toilet and shower-room.

Most large yachts, 50 ft (15 m) (15 m) and up, are also cruisers, but their design varies greatly as they are often "one off" designs tailored to the specific needs of the buyer. The interior is often finished in wood panelling, with plenty of storage space. Cruisers are quite capable of taking on long-range passages of many thousands of miles. Such boats have a cruising speed upwards of 6 knots. This basic design is typical of the standard types produced by the major yacht-builders.

*Source: <http://yacht4sale.net/yacht-construction/>*

### 3. LUXURY SAILING YACHT

**Match the words with explanations:** anchorage, propulsion, autopilot, auxiliary engine, echo-sounder, convenience, radar, winch, beam, drag

1. \_\_\_\_\_ automatic pilot.
2. \_\_\_\_\_ device that is used to pull in or let out or otherwise adjust the rope.
3. \_\_\_\_\_ any place where a vessel is anchored.
4. \_\_\_\_\_ a device for measuring depth of water by sending pressure waves down from the surface and recording the time until the echo returns from the bottom.
5. \_\_\_\_\_ something that increases comfort.
6. \_\_\_\_\_ secondary or supplementary.
7. \_\_\_\_\_ the resistance to the motion.
8. \_\_\_\_\_ one of the principal horizontal parts; the extreme width of a ship.
9. \_\_\_\_\_ a driving force.
10. \_\_\_\_\_ an acronym: a method and the equipment used for the detection and determination of the velocity of a moving object by reflecting radio waves off it.

**Fill in the gaps with the words from above:**

1. Our hotel room was equipped with all modern \_\_\_\_\_.
2. The mega-yacht \_\_\_\_\_ are available in both classic bronze and stainless steel design.
3. The approaching vessels were detected by \_\_\_\_\_.
4. The team used \_\_\_\_\_, which works much like underwater radar.
5. A navigational device that automatically keeps ships or planes on a steady is called \_\_\_\_\_.
6. \_\_\_\_\_ are any engines that are not main propulsion engines.
7. Researchers have been researching the low drag properties of fast swimming sharks, and have come up with a paint that reduces \_\_\_\_\_ by mimicking shark skin.
8. The \_\_\_\_\_ of a vessel are strong pieces of timber stretching across from side to side.
9. to the whale, his tail is the sole means of \_\_\_\_\_.
10. San Diego, Monterey, the bay of San Francisco, all afford \_\_\_\_\_ for ships of the largest class.

## **Luxury sailing yachts**

These yachts are generally 82 ft (25 m) or longer. In recent years, these yachts have evolved from fairly simple vessels with basic accommodation into sophisticated and luxurious boats. This is largely due to reduced hull-building costs brought about by the introduction of fibreglass hulls, and increased automation and "production line" techniques for yacht building, especially in Europe.

On the biggest, 130-foot-plus (40 m) luxury yachts, every modern convenience, from air conditioning to television, is found. Sailing yachts of this size are often highly automated with, for example, computer-controlled electric winches controlling the sails. Such complexity requires dedicated power-generation systems. In recent years the amount of electric equipment used on yachts has increased greatly. Even 20 years ago, it was not common for a 25-foot (7 m) yacht to have electric lighting. Now all but the smallest, most basic yachts have electric lighting, radio, and navigation aids such as Global Positioning Systems. Yachts around 33 ft (10 m) bring in comforts such as hot water, pressurised water systems, and refrigerators. Aids such as radar, echo-sounding and autopilot are common. This means that the auxiliary engine now also performs the vital function of powering an alternator to provide electrical power and to recharge the yacht's batteries. For yachts engaged on long-range cruising, wind-, water- and solar-powered generators can perform the same function.

## **Racing yachts**

Racing yachts try to reduce the wetted surface area, which creates drag, by keeping the hull light whilst having a deep and heavy bulb keel, allowing them to support a tall mast with a great sail area. Modern designs tend to have a very wide beam and a flat bottom, to provide buoyancy preventing an excessive heel angle. Speeds of up to 35 knots can be attained in extreme conditions. Dedicated offshore racing yachts sacrifice crew comfort for speed, having basic accommodation to reduce weight. Depending on the type of race, such a yacht may have a crew of 15 or more. Very large inshore racing yachts may have a crew of 30. At the other extreme are "single handed" races, where one person alone must control the yacht.

Yacht races may be over a simple course of only a few miles, as in the harbour racing of the International One Design; long-distance, open-ocean races, like the Bermuda Race; or epic trans-global contests such as the Global Challenge, Volvo Ocean Race, and Clipper Round the World Race.

## **Propulsion**

The motive force being the wind, sailing is more economical and environmentally friendly than any other means of propulsion. A hybrid type of vessel is a motor sailing yacht that can use either sail or propulsion (or both) as conditions dictate.

Many "pure" sailing yachts are also equipped with a low-power internal-combustion engine for use in conditions of calm and when entering or leaving difficult anchorages. Vessels less than 25 ft (8 m) (7 m) in length generally carry a petrol outboard-motor of between 5 and 40 horsepower (3.5 and 30 kW). Larger vessels have in-board diesel engines of between 20 and 100 horsepower (15 and 75 kW) depending on size. In the common 25 to 45-foot (7 to 14 m) class, engines of 20 to 40 horsepower are the most common.

## **Hull types**

Monohull yachts are typically fitted with a fixed keel or a centreboard (adjustable keel) below the waterline to counterbalance the overturning force of wind on the vessel's sails. Multihull yachts use two hulls (catamarans) or three (trimarans) widely separated from each other to provide a stable base that resists overturning and allows for sailing in shallower waters than most keeled monohulls.

*Source: [http://quote.luxinsure.com/sailing\\_yachts.html](http://quote.luxinsure.com/sailing_yachts.html)*

## 4. MOTOR YACHTS

**Match the words with explanations:** inefficient, hydrodynamic, swell, chine, amenity, combustion, versatility, sparse, internal, jarring, rugged, pound into

1. \_\_\_\_\_ thinly spread or distributed; not dense or crowded
2. \_\_\_\_\_ anything that adds to a person's comfort; convenience
3. \_\_\_\_\_ of or having to do with the inside; inner
4. \_\_\_\_\_ the process of burning, a chemical change, especially oxidation, accompanied by the production of heat and light
5. \_\_\_\_\_ operated by the action of water
6. \_\_\_\_\_ uneven in surface or contour; rough
7. \_\_\_\_\_ to bump or cause to move or shake from impact
8. \_\_\_\_\_ to strike or drive with repeated, heavy blows
9. \_\_\_\_\_ to rise in waves
10. \_\_\_\_\_ not producing the desired effect with a minimum use of energy, time
11. \_\_\_\_\_ the juncture of the bottom and either of the sides of a boat
12. \_\_\_\_\_ having varied uses or serving many functions

**Fill in the gaps with the words from above:**

1. Sadly, the literature on this topic is still somewhat \_\_\_\_\_.
2. Guests have access to the following \_\_\_\_\_: Health spa services, massage treatments, steam bath.
3. In that book you talk about \_\_\_\_\_ and external hurdles that affect African American relationships.
4. Internal \_\_\_\_\_ engines are used in cars to make the wheels go round.
5. Water tunnel is an experimental facility used for testing the \_\_\_\_\_ behaviour of submerged bodies in flowing water.
6. In Bavaria, further south, the land becomes \_\_\_\_\_.
7. There was a grumbling sound and \_\_\_\_\_ of keys.
8. He \_\_\_\_\_ the table with his fist.
9. The four authors claim the IMF is not sufficiently transparent and is handicapped by an \_\_\_\_\_ bureaucracy.
10. She is 60 ft. long with 5ft wide flat bottom and 8/10mm thick angled side \_\_\_\_\_.

11. \_\_\_\_\_ is the ability to adjust your behaviour in each situation.

## **MOTOR YACHTS**

### **Classification**

Motor yachts generally fit into the following categories:

Day cruiser yacht (no cabin, sparse amenities such as refrigerator and plumbing)

Weekender yacht (one or two basic cabins, basic galley appliances and plumbing)

Cruising yacht (sufficient amenities to allow for living aboard for extended periods)

Sport fishing yacht (yacht with living amenities and sporting fishing equipment)

Luxury yacht (similar to the last three types of yachts, with more luxurious finishings/amenities)

### **Propulsion**

Motor yachts typically have one or two internal combustion engines that burn diesel fuel. Depending on engine size, fuel costs may make motor yachts more expensive to operate than sailing yachts. Biodiesel for marine propulsion is in the experimental stage.

### **Hull types**

Boats perform in the water based on the physical shape of the hull, and how it sits in the water. The two general types of hulls are displacement and planing. Other types of hull construction combine features of the displacement and planing hulls and are called semi-displacement or semi-planing.

### **Displacement Hull**

Displacement hulls push through the water as they have no hydrodynamic lift, or the boat does not rise out of the water as speed increases. Some general characteristics of a displacement hull are:

- Rugged construction
- Easy to propel through the water at low speeds
- Large interior spaces

### **Planing Hull**

Planing hulls are designed to run on top of the water at high speeds. To achieve this they typically have a very flat stern. The hull design (shape) does not limit the maximum attainable

speed but does affect the power required for it to get on plane (on top of the water). Some general characteristics of a planing hull are:

- At high speeds in rough water the vessel will have a jarring ride as it pounds into waves and swells
- At high speeds, has a tendency to slide sideways in a turn
- Tends to roll at rest
- Inefficient at low speeds (takes more power to push through the water)

### **Semi-displacement / Semi-planing Hulls**

Semi-displacement or semi-planing hulls have features of both planing and displacement hulls. They have a maximum hull design speed. Exceeding this speed can result in erratic handling and unstable operation. There is not one hull design characteristic that differentiates semi-displacement from semi-planing hull. The greater the hydrodynamic lift and higher the hull design speed the more likely it will be referred to as a semi-planing hull. Some general characteristics of a semi-planing/displacement hull are:

- Has a pronounced chine (angular break where the bottom joins the hull sides) forward
- Has versatility of combining speed with sea-worthiness
- Offers a degree of useable interior spaces

*Source: <http://www.ultramarineyacht.com/blog/tag/semi-displacement/>*

## 5. YACHT BROKER

### Match the words with explanations:

corporate	a fee or a percentage of the proceeds paid to a salesperson, broker, etc., either in addition to, or in lieu of, wages or salary
certificate	a pleasure boat, esp. a yacht, with no personnel, rented to someone who will provide a captain and a crew; A boat, such as a yacht, that is chartered without a skipper or crew and usually without provisions
qualify	the master of a ship
crew	to provide food service for
licence	payment asked or given for professional services, admissions, licenses
catering	all personnel operating or serving aboard a ship
fee	a formal permission to do something
skipper	to make fit for an office, occupation, exercise of a right
bareboat	a document certifying that a person may officially practice in certain professions
commission	of or relating to a corporation

### Fill in the gaps with the words from above:

1. \_\_\_\_\_ are intended to create a strong incentive for employees to invest maximum effort into their work.
2. \_\_\_\_\_ means a fully equipped yacht without a skipper or crew.
3. Yacht chartering either bareboat or with \_\_\_\_\_ is the perfect solution for those who want to sail at their own pace.
4. The park is host to many events from Easter onwards and \_\_\_\_\_ tables are stationed around the park, including at the swimming pool.
5. Our income comes from \_\_\_\_\_ paid by our 4,500 member banks.
6. On the church wall is a memorial plaque to the \_\_\_\_\_ of a Greek ship lost in a storm in the twenties.
7. You see, should they get pulled over by a police officer, the officer will ask for the driver's \_\_\_\_\_.
8. You should always consult a suitably \_\_\_\_\_ lawyer about any specific legal matter.
9. Note that you must include a copy of your \_\_\_\_\_ with the application.
10. Their website has general information about \_\_\_\_\_ social responsibility.



## **YACHT BROKER**

A **yacht broker** is a specialist agent who acts as a representative for the sale of a yacht or boat. The yacht broker is paid an agreed commission the sale price of a yacht and to this end markets the yacht for sale. In the U.S.A. yacht brokers qualify with the Certified Professional Yacht Brokers (C.P.Y.B.)organisation, following courses of study and qualifying examinations. In the United Kingdom, C.P.Y.B. UK offers a similar professional certification path. Yacht brokers are more common where yachting is more common. For instance, yachting is very common in the Mediterranean and Caribbean Seas. These popular waterways for leisure boating are proximate to the large western populations of Europe and North America. Therefore Spain in Europe and Florida in North America have large populations of yacht brokers to service the concentration of yachts. The term 'yacht broker' can sometimes be confused with the term 'yacht charter broker'. A yacht broker acts as an agent in the sale of yachts, rather than the sale of charter time on yachts. A yacht charter broker specializes in the sale of fully crewed luxury yachts or smaller bare-boat yachts, or both. Occasionally a person will carry out both roles but more commonly a company as a whole will carry out both roles and employ both yacht charter brokers and yacht brokers. The roles are therefore normally specialised and distinguished.

**Yacht chartering** is the practice of renting, or chartering, a sailboat or motor yacht and travelling to various coastal or island destinations. This is usually a vacation activity, but it also can be a corporate event.

There are two main kinds of charter: bareboat and crewed. Bareboat charters involve a person renting a boat and skippering it themselves. Most bareboat companies also offer courses to teach basic seamanship and prepare people for bareboat chartering. These companies also sometimes provide skippered charters, meaning that boat comes with a skipper but no additional crew.

Crewed charter means the yacht comes with a crew. This can be anything from a 35-foot boat with a husband-and-wife team serving as captain and chef to a 300-foot boat with a squad of 30 or more crew members including stewardesses, engineers, mates, deckhands, scuba dive masters, and the like.

### **Yacht Chartering Types**

1. Un-inspected passenger yachts. Also known as 6-packs which are so named because they carry only six or fewer passengers. All captains start out by getting their "six-pack" licence.

6-pack yachts are great for smaller groups of six or less, and these yachts have a variety of types and sizes. For example, six packs can be sailing yachts, fishing boats, or power yachts and anything in between. While this type of charter is the least expensive of the two, you will still need a licensed captain, or skipper with you at all times. On six-pack charters you can choose your menu and the type of cruise you wish to take be it bay sailing or an ocean voyage.

2. Inspected passenger ships. Inspected charters are designed to carry groups large than six passengers. These charter vessels can range from large sailing yachts to dinner cruise ships. These charters are designed to carry up to several hundred passengers. Inspected vessels can offer many different features that an un-inspected passenger yacht can not. Features like catering, live music, or a DJ are available on these larger ships.

Several factors determine the cost of a charter, including the size of the yacht, its age, its pedigree, the number of crew, and the destination. The worldwide range of charter prices (per person per week) is estimated to be from \$1000 up to and in excess of \$20,000.

Megayacht or Superyacht that are over 150-foot to 300-foot is estimated respectively to fee from \$ 45,000 up to \$ 700,000 (per week)

*Source: [http://www.primidi.com/yacht\\_broker/locations](http://www.primidi.com/yacht_broker/locations), <http://www.net-charter.com/pn.asp?id=36>*

## 6. CHARTER

### Match the words with explanations:

master	direct the course; determine the direction of travelling
occurrence	a developed talent or ability
to pool	a stock of food and other supplies assembled for future needs
disponent owner	of, created by, based upon, or authorized by law
legal	ship-owner's customer, a person who charters something
hire	the captain of a ship
charterer	a person or company which has commercial control over a vessel's operation without owning the ship
manoeuvring	to get the services of (a person) or the use of (a thing) in return for payment
provisions	to form, or accumulate in
skills	something that takes place

### Fill in the gaps with the words from above:

1. She had difficulty \_\_\_\_\_ her car into the narrow space.
2. Have you shown you have developed the \_\_\_\_\_ the job needs?
3. On board were enough \_\_\_\_\_ for two weeks.
4. \_\_\_\_\_ advice should be sought in cases of doubt.
5. A person or a company acting as \_\_\_\_\_ of a ship assumes responsibilities broadly similar to those of an owner.
6. Should the yacht \_\_\_\_\_ or owner cancel the charter, the deposit is returned to the charter guests.
7. A charterer who has control of the vessel (e.g. under a bareboat or time charter) is referred to as a \_\_\_\_\_.
8. Boat \_\_\_\_\_ for longer holidays can be arranged at the Ashby Boat Company in Stoke Golding.
9. We \_\_\_\_\_ our money and bought a caravan that we could all use.
10. There will be at least ten paintings for sale, which is a rare \_\_\_\_\_.

**Skippered charter** means that the yacht is rented with a professional crew consisting of a skipper/captain who is responsible for the maneuvering of the yacht. In several cases the skipper is aided by other crew members as well.

Skippered charter is normally used for larger yachts for which a skipper/captain with documented special nautical skills and experience is required.

An example of skippered charter is the so-called "Blue Cruises" that operated with different gulets, a type of yachts that have been built in Turkey for several hundred years. There are many such gulets used for skippered charter also in Croatia.

A **bareboat charter** is an arrangement for the hiring of a boat, whereby no crew or provisions are included as part of the agreement; instead, the people who rent the boat from the owner are responsible for taking care of such things.

There are legal differences between a bareboat charter and other types of charter arrangement, such as crewed or luxury yacht charter, commonly called *time* or *voyage* charters. In a voyage or time charter the charterer charters the ship (or part of it) for a particular voyage or for a set period of time. In these charters the charterer can direct where the ship will go but the owner of the ship retains possession of the ship through its employment of the master and crew. In a bare-boat or demise charter, on the other hand, the owner gives possession of the ship to the charterer and the charterer hires its own master and crew. The bare-boat charterer is sometimes called a "disponent owner". The giving up of possession of the ship by the owner is the defining characteristic of a bare-boat or demise charter.

There are also hundreds of bareboat yacht charter brokers or agent companies. These companies offer yacht finding and travel organisation services similar to travel agent only more specialised. Their purpose is to use their experience and networks to locate a client's ideal bareboat in terms of price and location.

**Bareboat** hire has become increasingly common since the mid-1990s and in particular since the early 2000s. There has been increasing demand for yacht vacations and many experienced and semi-experienced 'yachties' now consider it easier and cheaper to hire a bareboat, rather than own their own yacht. While both the international leisure travel industry (particularly outdoor activities based vacations) and the boating industry has both boomed in the last decade, so has the bareboat charter industry which incorporates both of these pursuits.

In the USA there is an additional legal distinction with regard to bareboat versus for hire, or "skippered" charters. When persons pool their finances to bareboat so that the qualified master among them may skipper for the group, even though he is not ostensibly a paid skipper he now takes on the legal responsibilities of the paid skipper. This can have far-reaching consequences in the event of negative occurrences at sea.

*Source: <http://www.worldheritage.org/article/WHEBN0001532776/Yacht%20charter>*

## 7. CHARTER BOAT CHECKLIST

**Match the words with explanations:** reefing, windscoop, painter, hoist, sea-cock, outboard, windlass, unfurl

1. \_\_\_\_\_ to raise or haul up long.
2. \_\_\_\_\_ situated or positioned outside the hull of a vessel.
3. \_\_\_\_\_ to reduce the size of a sail by tucking in a part and tying it to or rolling it around a yard.
4. \_\_\_\_\_ a valve in the hull of a boat or ship that may be opened to let in water so as to flood a ballast tank, for example.
5. \_\_\_\_\_ lifting device consisting of a horizontal cylinder on which a cable or rope winds
6. rope that is attached to the dinghy for towing it, tying it to the boat or to a dock.
7. \_\_\_\_\_ to unroll, unfold, or spread out.
8. \_\_\_\_\_ a scoop-shaped device attached to an air port of a ship to direct outside air inside the ship.

### **Fill in the blanks with the words from above**

When you arrive at the base for your charter, unless you have the luxury of a crew — in which case you will just step on board and cast off — you have some work to do to make sure your cruise will go smoothly. Here is a checklist of the most common items to verify.

### ***Food & Provisioning***

If you have ordered food either from the charter company or from a supermarket, you have to double check that everything is conforming to your order. Often, you realize you have too much of this or not enough of that. Most supermarkets and charter companies allow to exchange some items in order to accommodate your new arrangement.

Make sure you have enough staples like paper napkins, paper towels, liquid soap, bathroom items, salt, pepper, sugar, cooking oil, ice.

Stow food in the order that you will use it: most perishable and first to be used near the top, but near the cooling plate - But don't store lettuce or other veggies next to the cold plate.

### ***Refrigeration***

Make sure it is in working order. A good charter company will run the systems (engine or onshore power) before your arrival for you to find a cold freezer and fridge when you step on board. If it is cold plate system, the plates should be covered with a thin layer of soft ice.

### ***Water Tanks***

Charter Companies are supposed to give you a boat with full tanks. Well, I wrote: "Supposed". Sometimes, for whatever reason, this does not happen. So make sure you top off all your tanks yourself. Check that all faucets (slavine) are working including the deck shower.

### ***Dinghy***

Before leaving the dock, start the outboard and check that it spits water. If it is an inflatable, make sure it is properly inflated and that you have an air pump on the boat. Check the gasoline level. The following should be on board the dinghy:

- Fuel tank - full
- Wrist set
- Bailing bucket (To remove (water) from a boat by repeatedly filling a container and emptying it over the side)
- Paddles / Oars: are they in there and the right size?
- Wrist/disconnect attachment set.
- Long \_\_\_\_\_ (konop za vezivanje brodice)
- Cable with lock
- Small dinghy anchor.
- Safety line between dinghy hull and \_\_\_\_\_ in addition to the outboard clamps (spone).

### ***Anchors***

Go to the bow, grab the anchor remote control or whatever device you need to make the \_\_\_\_\_ work, and try it both ways a couple of times. You certainly do not want to find out the anchor does not go back up when you have to leave an anchorage in a hurry. Or not for that matter — who needs to weigh a 40lbs anchor with 100ft of chain, right?

### ***Boat Tour by Charter Company Briefer***

**Pay attention to this**, ask all questions you need, and have another person present. Pay particular attention to important items below:

- Location and operation of all \_\_\_\_\_ (sigurnosni ventil)
- Understanding of bilge pumps procedures, *including manual pump*
- Location of flares and fire extinguishers
- Windlass: electric *and* manual procedures in case of power failure
- Location of anchor windlass reset button (if electrical system gets into an overload)
- Location of spare anchor
- Water tanks switching procedure
- Location and operation of fire extinguishers
- Testing of the stove and propane system with the briefer (propane tanks full?)
- Propane shutoff valve
- Operation of refrigeration systems and fridge drain (odvod)
- Understanding of the marine head(s) and holding tank procedures (to ensure they work, and to prevent them from clogging or flooding)
- Understanding of the \_\_\_\_\_ procedure on this particular boat
- \_\_\_\_\_ of the main a few feet to check it goes up and down freely
- \_\_\_\_\_ of the head sail a couple of turns to check it furls in smoothly
- Location of the emergency tiller
- Location of the First Aid kit (should be fully stocked)
- Location of the tool box, with spare oil
- Testing of the VHF and other electronics with the briefer present
- 12 V outlet(s) tested
- Location of engine oil stick and cooling water tank
- Starting of the main engine and transmission testing, forward and backward, with the briefer present
- Fuel and water tanks deckplate keys

### ***Weather***

Get the latest forecast as well as the trend for the coming days.

Ask the base staff if there is anything in particular you should know for the duration of your cruise - strong winds expected, expected change in the usual patterns, etc.

If your charter is during the summer months in the Caribbean, ask the base staff what the procedure is in case there is a tropical storm coming and they have to recall the boats back to the base.

### *Miscellany*

- Flashlights working? Enough batteries for the flashlights.
- WD 40 or some kind of lubricant
- Boat hook
- Dock lines
- Main companionway locking key
- All necessary charts, cruising guides on board.
- All life jackets on board, including for the kids.
- A couple of \_\_\_\_\_ (ventilirajuće jedro) for improved ventilation.
- Snorkeling gear on board.
- Boat documentation, cruising permits (if necessary) in order?
- Ask crew to have everything properly stowed and nothing lose in cabins
- If you are cruising the Caribbean and are planning to visit several islands which involve actually changing "countries": have your crew list in several copies to avoid having to rewrite the same information several times over.
- Check for special events in your area.
- 

The faster you get this necessary stuff done, the faster you can get out and to your first anchorage. This takes some coordination, as you can see, but it is imperative that all this be accomplished to have a safe and pleasant cruise.

*Source: [https://www.sailonline.com/boat-charter/helpful-files-a-resources/charter-boat-check list](https://www.sailonline.com/boat-charter/helpful-files-a-resources/charter-boat-check-list)*



## 8. YACHT TRANSPORT

**Match the words with explanations:**

weld	the place toward which someone or something is going or sent
comply	producing good results for the amount of money spent; efficient or economical
destination	movement from one place to another
rigging	using up much or too much time
submersible	a disadvantage or inconvenience
permit	a system of protection against loss
time consuming	a document granting permission; license; warrant
drawback	a vessel designed to operate under water; able to function while submerged
cradle	to unite (pieces of metal, plastic, etc.) by heating
freight	to remove ballast from a vessel
passaging	wooden or metal framework to support or lift a boat, ship, aircraft, etc. that is being built or repaired
insurance	the ropes, chains, and other gear used to support, position, and control the masts, sails, yards, etc. of a vessel
deballast	the goods transported; cargo
cost effective	to act in accordance

**Fill in the blanks with the following words:** sealed, cost effective, shipping, fees, insurance, time consuming, timing, destination, globe, comply, schedules, coverage

Yacht transport is the shipping of a yacht to a \_\_\_\_\_ instead of sailing or motoring it. Yacht transport is an alternative to the traditional passaging (sailing or motoring) to reach desired destinations around the \_\_\_\_\_. Transport when compared to passaging is \_\_\_\_\_, safer and improves availability.

For many dedicated sailors, passaging or an ocean crossing is a rite of passage, but it comes with many risks and expenses. For many serious cruisers, financial, business and family considerations argue against the long-term full-time dedication that ocean crossings require. Yacht transport becomes an alternative when the destination and cruising is more important than the passaging.

Yacht transport generally eliminates costly, \_\_\_\_\_, and dangerous difficult ocean crossings, opening up cruising to more people. Container cruising, one approach to yacht transport, is significantly less expensive and has greater flexibility with respect to \_\_\_\_\_ and destinations. The drawback to container cruising is that there are a

limited number of yachts that have the necessary 7.5 ft. beam (2.3 m) to fit in the 8-foot-wide (2.4 m) standard container.

## **Transport methods**

### ***Overland transport***

Small boats being transported short distances are often moved using private or commercial trailers. As the boat size and the over-land distances increase, commercial trailer services are typically employed by boat owners to move vessels. Insurance \_\_\_\_\_, transport permits, trailer safety and proper preparation and loading of the vessel and contents are aspects commercial boat/yacht services provide.

### ***Semi-submersible ships (SSS)***

Semi-submersible ships were developed to move large (project) cargoes, but have now been adapted for yacht shipping. These ships are semi-submersible. This means that by ballasting, they can submerge their cargo holds. Yachts motor under their own power into the flooded cargo holds to load. Once all the yachts are in position and secured, divers weld hull supports into place. The ship deballasts and sails away. At discharge port arrival, the process is reversed, with the ship ballasting, allowing the yachts to exit. Semi-submersible shipping is arranged by the owners.

### ***Deck cargo***

Yachts can be shipped as deck cargo. Yachts are loaded directly from the water or from shore. Yachts are loaded by ship or by shore cranes in cradles either supplied by the carrier or the owner. For conventional deck cargo shipping, the rigging is left intact. Yachts are also transported by container ships. Because container freight is sold on the basis of total enclosed volume, efforts are made to decrease that volume, including derigging the boat. Deck cargo shipping is normally arranged directly with the shipping lines or with brokers who specialize in yacht deck cargo shipping.

### ***Container shipment***

If a yacht meets the restrictions imposed by container sizing, typically 39 ft. (11.9 m.) x 7.5 ft. (2.3 m.) x 9.3 ft (2.8 m.), container shipping is an alternative. Container \_\_\_\_\_ is arranged through freight forwarders.

Costs include the cost of preparation, cradles, documentation, and customs and other government\_\_\_\_\_. Container shipment costs are almost independent of distance shipped and depend more on imbalances in container locations.

### ***Scheduling***

The Semi-submersible ships travel on fixed \_\_\_\_\_ over popular routes such as to and from the US, Europe, the Caribbean, and Pacific Ocean destinations.

While in theory, deck cargoes can be arranged between any two ports and at any time, costs are reduced if a number of yachts are shipped together. Because most ships are non-US flag carriers, they are forbidden by law to transport cargoes between US ports. To \_\_\_\_\_ with the law, they load or discharge in Canada, the Bahamas or Mexico. Container shipping offers complete flexibility with respect to ports and timing.

### ***Security***

The locked and \_\_\_\_\_ container provides the best overall security. The semi-submersible ships because they are dedicated to yacht transport, also offer a secure environment. In addition to theft. another potential problem is partial or total losses at sea. Probability of losses is low, reflected by the lower cost of \_\_\_\_\_.

The increasing cost of fuel, the convenience, and the ability to go anywhere make yacht transport an attractive alternative.

*Source: [http://www.cargohandbook.com/index.php/Boats\\_and\\_Yachts](http://www.cargohandbook.com/index.php/Boats_and_Yachts)*

## 9. RIGGING

**Match the words with explanations:** main mast, pulley, mizzen mast, batten, yards, sheet, fore mast, halyard

1. \_\_\_\_\_ - a simple machine consisting essentially of a wheel in which a pulled rope or chain can run to change the direction of the pull and thereby lift a load
2. \_\_\_\_\_ - a line (rope) that is used to hoist a sail, a flag or a yard
3. \_\_\_\_\_ - a the third mast from the bow
4. \_\_\_\_\_ - a line or rope for controlling the position of a sail relative to the wind
5. \_\_\_\_\_ - the mast nearest the bow on vessels with two or more masts
6. \_\_\_\_\_ - the principal mast of a sailing vessel; the taller mast, whether forward or aft, of a two-masted sailing vessel; the second mast aft of a sailing ship with three or more masts
7. \_\_\_\_\_ - narrow flat length of wood or plastic inserted in pockets of a sail to give it proper shape
8. \_\_\_\_\_ - horizontal spar used with square sails

### Fill in the blanks with the words from above

Rigging is the apparatus through which the force of the wind is used to propel sailboats and sailing ships forward. This includes masts, yards, sails, and cordage.

### Terms and classifications

Rigging is the mechanical sailing apparatus attached to the hull in order to move the boat as a whole. This includes cordage (ropes attached to the spars and sails in order to manipulate their position and shape), sails (aerofoils, usually made of fabric, used to catch the wind), and spars (masts and other solid objects sails are attached to). Cordage is more usually the term for stocks of rope or other types of line in storage, before it has been put to some use in a vessel, whereafter is commonly referred to as the rigging.

### Parts of rigging

#### Cordage

The term cordage refers to the ropes, called lines, which connect and manipulate sails. Cordage is attached to the spars and sometimes the sails by systems of metal \_\_\_\_\_ (kolotura) and clips (spojnica). The materials chosen for cordage are determined by the

strength and weight of the rope. Cordage is divided into two types: running rigging and standing rigging.

Standing rigging is cordage which is fixed in position. Standing rigging is almost always between a mast and the deck, using tension to hold the mast firmly in place. Due to its role, standing rigging is now most commonly made of steel cable. It was historically made of the same materials as running rigging, only coated in tar (katran) for added strength and protection from the elements.

Running rigging is the cordage used to control the shape and position of the sails. Running rigging must be flexible in order to allow smooth movement of the spars and sails, but strong enough for the role it plays. For instance, a \_\_\_\_\_, used to hoist heavy \_\_\_\_\_ up and down, must be very strong and durable. On the other hand, a \_\_\_\_\_, used to control the orientation of a triangular sail, must be very flexible and smooth, and need only be strong enough to support the tension caused by the wind.

## **Sails**

Sails are fabric aerofoils designed to catch the wind and manipulate the air currents surrounding the vessel. They are attached to spars and rigging in various ways, such as metal clips or rope hoops (karika). Sails are usually rectangular or triangular in shape, which determines their use and placement. Rectangular sails attached to yards, and hanging perpendicular (okomito) to the keel line are referred to as square sails, because they are "square" to the keel line (not because of their shape); and this type of sailplan is known as square-rigged. Sails hanging along the keel line at rest are known as "fore-and-aft" sails, and the sailplan as fore-and-aft rig; although when under way both square and fore-and-aft sails can fly at a variety of angles relative to the vessel. Fore-and-aft sails may be triangular or quadrilateral.

Sail material must be durable against weather, lightweight, and non-porous.

Sails are classified according to their shape and location. The name of a sail on a square-rigged vessel with multiple masts consists of the mast name and the sail's vertical position. On a three-masted vessel the masts are, from bow to stern, \_\_\_\_\_; the "plain" square sails are, bottom to top, *Course*, *Topsail*, *Topgallant*, *Royal* and *Sky*. On a modern fore-and-aft rigged boat the largest sail set on the main-mast is known as the *mainsail*, rather than main course. Sails set forward of the foremost mast are known generically as *headsails*, and might include jibs, genoas and spinnakers.

## Spars

Spars are solid or hollow beams used to support and manipulate sails. Masts, yards, booms, gaffs (sošnjak) and battens are the most commonly encountered spars. Spars can be made of any sufficiently strong material. Flexibility and weight are primary concerns for materials; ideally, spars would be sufficiently flexible to allow control over the shape of the sail without being too flexible, as well as lightweight in order to maintain a low and stable center of balance. Spars were traditionally made from wood and later steel, but are now usually aluminium and increasingly from composite materials such as carbon fibre.

Masts are spars firmly attached to the deck of the ship or, more usually, passing through the deck(s) and secured on the keel. They are the main support for the sails, and all but the most speculative sailboats have at least one, generally set along the centreline. The classification of a mast is determined by its position, size and use.

A ship's vertical masts are named, from bow to stern, the fore-mast, the main-mast, the mizzen-mast and the jigger-mast (kratki jarbol).

Masts carrying rectangular or square sails have horizontal yards (križ jarbola) to stabilize the top and bottom edges of the sails. These yards can rotate around the mast, allowing the sails to be oriented horizontally, usually up to 45 degrees from perpendicular to the centreline.

Gaffs are spars attached to the mast in a similar manner to the boom, but hinge vertically. Gaffs "joint" sails, allowing for two smaller sails (one above the gaff and one below) rather than one large, triangular sail. \_\_\_\_\_ are included within the sail, usually used to extend the roach (the curved portion of a sail extending past a straight line drawn between two corners) but also to aid its furling.

*Source: <http://en.wikipedia.org/wiki/Rigging>*

## 10. KEEL

**Match the words with explanations:** turbulence, to ground, shoal, muck, to tack, to heel, gust

1. \_\_\_\_\_ - to lean over.
2. \_\_\_\_\_ - to change the direction or course of a vessel.
3. \_\_\_\_\_ - a state of violent disturbance and disorder.
4. \_\_\_\_\_ - a shallow place in a body of water.
5. \_\_\_\_\_ - a strong, abrupt rush of wind.
6. \_\_\_\_\_ - a moist sticky mixture, especially of mud and filth.
7. \_\_\_\_\_ - to run (a vessel) aground.

### **Fill in the gaps with the words from above**

A keel balances a monohull in the water. The keel is a large flat shape with an aerodynamic leading edge. The main types of keels are the full, deep fin, bulb, wing, centerboard, and canting. The full is the oldest and slowest while the canting is the newest and most complex. In general, the bulb, wing, and centerboard are compromises on a deep fin to allow for shoal water cruising.

### **Full**

a rudder. The main advantage of a full keel are safe \_\_\_\_\_ and directional stability. Safe grounding means a full keel is safer when you lie on hard ground. Whether along the coastline or in travel lift (pokretna dizalica) slings (remen), the full keel provides a strong, stable balancing point for the hull. A full keel boat will not tip on its bow or stern. When you ground then, the boat will lay on her side in shoal water and take less damage. In a travel lift, the full keel is easier to sling (objesiti) with the longer keel line. Blocked up on the hard, the full keel provides a line of balance. Be it an unintentional or intentional grounding, a full keel has more stability.

A full keeled boat points well when in the water. It has good directional stability. Put the boat in a compass direction and with a properly designed full keel is likely to stay pointing in that compass direction. The full keel has longer waterline length so controls the flowing water more than shorter keels. The water rushes by for a longer distance and smoother flow. Turbulence is less likely to generate forces to twist the boat. The full keeled boat is less likely

than a fin to fall off because of this smoother flow. The boat has greater directional stability than a fin.

### **Fin**

A fin keel is much shorter (fore-and-aft) than a full keel. A fin keel is often deeper, in order to move the ballast weight as low as possible in the water. With less wetted surface and drag, fin keel boats are usually faster than their full-keel counterparts. With less keel length to resist the turning action of the rudder, a fin-keel boat turns more quickly and usually \_\_\_\_\_ easily. Most racing sailboats have fin keels (or a centerboard that is similarly shaped).

Because the shorter keel provides less resistance to forces that act to throw a sailboat off course, such as wind \_\_\_\_\_ and waves, a fin-keel sailboat does not track (kretati se) as well as a full-keel boat and requires more attention to the helm. Its motion may not be as sea-kindly.

### **Bulb**

The bulb is a \_\_\_\_\_ draft fin keel. Basically, you saw off a deep fin keel and attach a torpedo shaped bulb of lead to the keel bottom. This shallower keel is a compromise between the performance of a fin but the realities of cruising in the Bahamas, Chesapeake Bay, and other shoal water holes. Often makers these days produce shoal and deep versions of their designs. If you plan to sail in shoal waters, a bulb keel is recommended but otherwise you will enjoy the deep fin keel. As a side benefit if you do ground on a soft bottom and sink in, the bulb keel is the easiest to free. The bulb does not stick way down into or catch the muck (prljavština) like other designs.

### **Wing**

The wing is another shoal alternative to the deep fin. Instead of one bulb at the keel bottom, the wing has two bulbs laterally offset and connected via lead airplane wings. Or the wing is a thick foil of lead without bulbs. The wing has better performance than the bulb because she reduces vortex (vir) \_\_\_\_\_. The draft can be even less. Because the two bulbs are \_\_\_\_\_ (izbočene) they do not mess with the leading keel edge and generate turbulence like a simple bulb keel. As a drawback, the wing is the most difficult to free if you slide into \_\_\_\_\_. The wings have a way of gripping down into (uhvatiti) the bottom.



## **Centreboard**

Another shoal idea is the centreboard. When the water is deep, you stick the centreboard down. When shoal, you sail centreboard up. You get the performance of a deep keel and the maneuverability of the shoal. The drawback is maintenance with the centreboard. As with any moving part, problems arise. The centreboard has to be maintained.

## **Canting (nagibna kobilica)**

The latest and oddest in performance is the canting keel. A canting keel mounts on a hinge (šarka, zglob) and when the boat \_\_\_\_\_, racers hydraulically rotate the keel to windward. Rotating the keel away from your heeling direction, generates force which both rights the boat and propels her forward. The downside is the maintenance and complexity associated with the canting keel. It is the future for racing but not perfected yet. There are downsides of maintenance and the inherent risk of failure with any complex system. Every sailboat decision is a trade-off (kompromis).

*Source: [http://sailing.about.com/od/typesofsailboats/ss/Keelshapes\\_2.htm](http://sailing.about.com/od/typesofsailboats/ss/Keelshapes_2.htm)*

## 11. COLREGS - INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

### Arrange the words to make meaningful sentences:

1. Any vessel/ its way./ and unsure of/ what tack/ must keep out of/ on a port tack/  
another vessel is on./
2. Racing/ abide by/ should/ are based on/ which/ the IRPCS./ skippers/ additional rules/
3. The purpose of/ are approaching/ ships and boats/ when vessels/ confusion/given that/  
are free/ to move/ in any chosen/ direction./ the IRPCS rules/ is to prevent/
4. Responsibilities/ a constant lookout/ keeping/ at all times./ proceeding/ and when  
close/ the sea state/ and wind./ include/ at a safe speed./ taking account of/ to  
navigational hazards/
5. Confusion / trying/ is the stand-on/ or give-way/ in a situation./ to judge/ can arise/  
which boat/ vessel/
6. Have/ checked./ situation/ available/in the cockpit/a ready reference/ any unfamiliar/  
to the COLREGS/ so that/ can be/
7. As two powered vessels/ port-to-port./ and are approaching/ each should/ alter course/  
they pass/ meet/ each other/ head-on./ to starboard./ each other/ so that/

### Put the sentences from above in the correct order in the text

Copies of the IRPCS regulations or Colregs, can be bought but are reprinted in almanacs. National governments and local authorities impose their own regulations covering harbours, rivers, or inland waterways in addition to the Col Regs and details are found in local pilot books. \_\_\_\_\_

Along with these maritime navigation rules, the skipper of a sailing vessel fitted with a motor should be aware of the diverse rules that apply when sailing and when motoring. \_\_\_\_\_

### Maritime Navigation Rules of the Road

Sailors refer to the 'maritime navigation rules of the road', which are the marine navigation rules they are most familiar with and apply to their everyday use in confined channels where the application of the rules prevents a collision with other vessels.

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Large ships follow well-charted sea routes, but smaller sailing vessels have greater freedom in movement and do cross these routes.

The ColRegs are specific and there are duties that each vessel must observe. Situations in which two vessels are approaching each other, the rules designate one as the give-way vessel (brod koji izbjegava), which takes avoiding action and the other as the stand-on vessel (brod koji ima pravo puta), which has the right of way. The give-way vessel must take positive action in plenty of time to avoid a collision, and course alteration or change in speed should be obvious to the other vessel. The master of each vessel has an expectation that the other will act according to the maritime navigation rules, but should be prepared to take avoiding action if necessary.

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When under power, it is easily understood by referencing the sectors of the basic navigation lights. Under sail and sailing to windward on port tack, it may be difficult to decide, especially at night, if a boat to windward and running downwind is on port or starboard tack.

If on port tack, your boat has right of way and should stand on, but if the other boat is on starboard tack, it has right of way requiring your boat to keep clear. Where there is any doubt, assume that your boat has to give way and be ready to take evasive (odstupajući) action early before a danger of collision arises.

## **Keeping a Lookout**

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Lookouts should use a clock-notation (bilježenje) system to tell the skipper where an approaching vessel is in relation to the yacht and an estimate of the distance of the ship and its direction of travel.

A sailing boat underway should keep clear of:

- A vessel not under command
- A vessel restricted in its ability to manoeuvre
- A fishing vessel
- A vessel constrained by its draught

Fishing vessels are unpredictable as they move in all directions. The ColRegs acknowledge this and the advice is to keep clear of vessels identified by the appropriate lights or shapes, as fishing vessels.

Commercial shipping should be treated with great caution. Theoretically, they are required to give way to sailing vessels. Usually they are on autopilot in open waters and restricted in narrow channels, so demonstrate your intentions and do not insist on right of way.

### **Collision Avoidance Basic Rules**

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\_\_\_\_\_The vessel, which has the other vessel on her starboard side when crossing each other's path, should keep out of the way, crossing below the other vessel. Remember the rule by this saying, 'If I am on the right, I am in the right.' An overtaking vessel, approaching from about 22 degrees either side of dead astern, must keep clear of the overtaken vessel.

### **Racing Rules**

Racing rules are formed from rules relating to sailing vessels. Therefore, with two boats on different tacks, the vessel on a port tack (with the wind blowing over its port side) must keep out of the way of one on a starboard tack (with the wind over its starboard side).

When two boats are on the same tack, the windward boat (the one closest to wind) must keep out of the way of the vessel to leeward.

\_\_\_\_\_The windward side, with regard to racing rules, is determined to be the opposite side to that on which the mainsail is carried. Overtaking rules are the same as for powered vessels and are designed to keep the overtaking vessel away from the vessel being overtaken.

### **Taking Evasive Action**

Yacht crews may be small and inexperienced, but it is essential that a lookout is kept at all times. Instruct the crew to alert the skipper whenever an approaching vessel is seen. When your boat is the give-way vessel, or the situation is uncertain, take evasive action well in advance prior to a potential collision. When in a crossing situation with a large ship, there may be uncertainty as to whether your boat and the other boat are on a collision course.

Source: [http://www.working-the-sails.com/rules\\_of\\_the\\_road.html](http://www.working-the-sails.com/rules_of_the_road.html)

## 12. COLREGS - INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA (2)

**Find the words that mean:** “direction/position”, “clash/impact”, “keep away from”, “in a backward direction”

### **Assessing a Likely Collision**

Make use of a hand bearing compass to take bearings of the approaching ship at frequent intervals. If the bearing remains the identical, then each are on a collision course and immediate action must be taken.

An alternative to taking compass bearings, use a part of the boat, such as a stanchion, as a reference point. The boat is on a collision the reference point it will pass ahead of your boat, if it falls back your boat will pass ahead of it.

Having decided to take avoiding action, make a significant course change indicating that your intentions are obvious to the other vessel. Avoid crossing the bows of another craft which may be moving much faster than thought. If possible, alter course to pass astern of the other vessel or if in doubt, turn onto a parallel course in the same direction as the other vessel and wait for it to pass.

### **Navigation Light Sectors**

Under power, use another power boat's light sectors to decide when to give way or stand-on. In the white or red sectors, give way; in the green sector, stand-on.

**Find the words that mean:** “transport/movement”, “passageway”, “danger”, “stream/movement”, “drive/conduct”

### **Traffic Separation Zones**

Traffic-separation schemes in busy shipping areas are in position to keep local traffic separate from through traffic and are split into two lanes. Between the traffic lanes are separation zones which are restricted to fishing vessels, ships in a state of emergency, and those crossing the lanes. Vessels that are crossing a separation zone must do so at right angles.

Entering a traffic lane should be done at the ends of the lane where possible, or at a shallow angle so as to blend into the traffic flow. Local traffic uses the inshore zones and keep out of the lanes. If crossing a traffic-separation scheme, it is important that it is done as quickly as

possible. Steer a course at right angles to the lane while not adjusting the course to allow for any sideways tidal effect, as this increases the time that it takes to cross.

**Find the words that mean:** “passable”, “beached”, “the right-hand side”, “movement”

### **Other Factors**

In narrow navigable channels, it may be impossible to make large course changes without the prospect of going aground. Commercial vessels are constrained by their draft and when in the channels, yachts should keep to the periphery of the channel.

The common 'rule of the road' is that traffic keeps to starboard (the right) while navigating channels. In a channel with blind bends, another rule is that the appropriate sound signals should be sounded prior to engaging in specific manoeuvres.

### **Sound Signals and Daylight Shapes**

In clear visibility, sound signals indicate that a vessel is carrying out a manoeuvre. Under power and in sight of each other, when one boat is altering course, it indicates its intentions by horn signals. When at night, an all-round white light is flashed for the appropriate number of times.

Vessels must use shapes during the day to make identification easier. An inverted cone shape on the forestay (prednji štraj – pridržava jabol na pramcu) indicates that a yacht is motor-sailing, and a ball shape in the rigging indicates it is at anchor.

**Find the words that mean:** “loud sound”, “curve”, “change”, “lengthened”, “period”

### **Sound Signals**

Sound signals comprise of short blasts of 1 second duration and prolonged blasts of from 4 to 6 seconds. A vessel when approaching a blind bend sounds one prolonged blast and another vessel approaching the bend in the opposite direction, sounds a prolonged blast in reply.

In sight of each other the vessels sound:

- one short blast indicating an alteration to starboard;
- two short blasts indicate an alteration to port;
- three short blasts tell other craft that the sounding vessel's engines are going astern.
- five short and rapid blasts; signals that the sounding vessel is confused as to the other's intentions.

In a narrow channel, when a vessel comes up behind and gives:

- two prolonged blasts followed by a short one, means 'I intend to overtake on your starboard side.
- two of each means 'I intend to overtake on your port side.'

The signal is acknowledged by four blasts - one prolonged, one short, one prolonged and one short meaning 'I agree and will keep my course.'

When visibility is restricted, there are of a number sound signals that must be understood. The principal maritime navigation rules governing a motor sailing vessel are:

- when sailing, one prolonged and two short blasts at not more than two-minute intervals;
- when motoring, one prolonged blast at not more than two-minute intervals.

If you are at anchor in an area where a risk of collision exists, ring a bell or strike a gong for five seconds once a minute.

*Source: [http://www.working-the-sails.com/rules\\_of\\_the\\_road.html](http://www.working-the-sails.com/rules_of_the_road.html)*

## 13. YACHTING

**Match the words with explanations:** evolve, harbour, effectively, custom-built, invention, facilities, favourable, challenge, skiff, shelter, novice, arrangement, conduct, struggle

1. \_\_\_\_\_ - a person new to a field or activity; a beginner
2. \_\_\_\_\_ - to make great efforts or attempts
3. \_\_\_\_\_ - in an effective manner
4. \_\_\_\_\_ - to develop by gradual changes
5. \_\_\_\_\_ - something created to serve a particular function
6. \_\_\_\_\_ - built to order, according to the customer's specifications
7. \_\_\_\_\_ - pleasing or desirable
8. \_\_\_\_\_ - to manage, control, or direct
9. \_\_\_\_\_ - to provide cover or protection for
10. \_\_\_\_\_ - a sheltered part of a body of water deep enough to provide anchorage for ships
11. \_\_\_\_\_ - a new device, method, or process developed from study and experimentation
12. \_\_\_\_\_ - anything, as a demanding task, that calls for special effort or dedication
13. \_\_\_\_\_ - any of various small, light, open boats propelled by oars, motor, or sail
14. \_\_\_\_\_ - a preparation; plan

**Fill in the gaps with the words from above:**

1. They have patented two \_\_\_\_\_ related to underwater photography.
2. Don't miss out on the opportunity to see the first \_\_\_\_\_ boat and meet the team of experts who built this boat and can build the boat of your dreams.
3. Understanding the climate system is a major research \_\_\_\_\_.
4. Everyone knows humans \_\_\_\_\_ from apes.
5. Find out about all the great \_\_\_\_\_ on board the Ocean Village Cruise liners.
6. They had a pretty fast \_\_\_\_\_ which was just like a rowing boat with outboard engines fitted.
7. Her review of the new restaurant was \_\_\_\_\_, as she had been very pleased by the service she received and the food she tasted



8. Program officials will \_\_\_\_\_ an extensive investigation to determine the cause of the failure
9. Like ocean beaches, \_\_\_\_\_ coastal areas experience land loss from erosion and sea level rise.
10. Pets allowed by prior \_\_\_\_\_ at a small extra charge.
11. All \_\_\_\_\_ must be supervised.
12. These are real problems that can be dealt with most \_\_\_\_\_ by rational discussion.
13. All his life he has been \_\_\_\_\_ against injustice.
14. As the Harbor Master in a busy \_\_\_\_\_, you direct ships in - and out!

**Fill in the gaps with the words from above:**

**Yachting** refers to recreational sailing or boating, the specific act of sailing or using other vessels for sporting.

**Competitive Sailing**

Sailing is a sport. The \_\_\_\_\_ of sailing is prehistoric, and the racing of sailing boats is believed to have started in the Netherlands some time in the 17th century. Soon, in England, \_\_\_\_\_ racing "yachts" began to emerge. In 1851, a \_\_\_\_\_ to an American yacht racing club in New York led to the beginning of the America's Cup, a regatta won by the New York Yacht Club until 1983, when they finally lost to the Royal Perth Yacht Club of Australia. Meanwhile, yacht racing continued to \_\_\_\_\_, with the development of recognised classes of racing yachts, from small dinghies up to huge maxi yachts.

Although there are many different types of racing vessels, they can generally be separated into the larger yachts, which are larger and contain \_\_\_\_\_ for extended voyages, and smaller harbour racing craft such as dinghies and \_\_\_\_\_. Smaller boats are not generally referred to as yachts, although all recreational boats (as opposed to commercial or military vessels) are yachts. These days, yacht racing and dinghy racing are common participant sports around the developed world, particularly where \_\_\_\_\_ wind conditions and access to reasonably sized bodies of water are available. Most yachting is \_\_\_\_\_ in salt water, but smaller craft can be - and are - raced on lakes and even large rivers.

Dinghy races are conducted on \_\_\_\_\_ water on smaller craft with crews of between one and three people. The common \_\_\_\_\_ for racing boats is the sloop, a boat with one mast. Some dinghies have only one triangular sail, but most have two configured as a sloop;

some dinghies and almost all larger racing boats carry a spinnaker, a large, bulging (ispupčeno) sail designed for sailing "with the wind." Most races are conducted between vessels of identical design ("one design" racing).

Dinghy designs vary from small, stable, and slow craft for \_\_\_\_\_sailors to lightweight, high-speed designs that are very difficult for even experienced crews to sail safely and\_\_\_\_\_. Australia's 18-foot skiff class are the fastest monohull dinghies, reaching speeds of up to 40 kilometres per hour (25 miles per hour) even in relatively light winds. Sailing has a reputation for being a boring spectator sport, but skiff racing can be very exciting, particularly in unpredictable conditions where crews \_\_\_\_\_ to keep their boats upright. Various multi-hull racing classes are even faster. Various one-design dinghy classes are raced at the Summer Olympic Games.

Larger yachts are also raced on\_\_\_\_\_, but the most prestigious yacht races are point-to-point long distance races on the open ocean. Bad weather makes even finishing such races a considerable test of equipment and willpower, and from time to time boats and sailors are lost at sea. The longest such events are "round-the-world" races which can take months to complete.

*Source: <http://en.wikipedia.org/wiki/Yachting>*

## 14. SAILING

**Match the words with explanations:** recreational, performance, navigation, torque, foil, airflow, current, sail-powered, rudder, mastery, extended, onwards, flow

1. \_\_\_\_\_ - the motion of air currents around an object as it moves through the air
2. \_\_\_\_\_ - stretched out in time, space, influence, application
3. \_\_\_\_\_ - a vertically hinged plate of metal, fibreglass, or wood mounted at the stern of a ship or boat for directing its course
4. \_\_\_\_\_ - at or towards a point or position ahead, in advance
5. \_\_\_\_\_ - the guidance of ships or airplanes from place to place
6. \_\_\_\_\_ - outstanding skill; expertise
7. \_\_\_\_\_ - a stream of water
8. \_\_\_\_\_ - a continuous movement or circulation
9. \_\_\_\_\_ - of or relating to recreation, not professional
10. \_\_\_\_\_ - propelled by the power of sails
11. \_\_\_\_\_ - a turning or twisting force
12. \_\_\_\_\_ - metal in the form of very thin sheets
13. \_\_\_\_\_ - the way in which someone or something functions

**Fill in the gaps with the words from above:**

1. Navy returning to \_\_\_\_\_ ships.
2. We design our air filters to provide minimum restriction allowing high \_\_\_\_\_ into an engine.
3. You can't accept \_\_\_\_\_ drug use and expect to control the drug problem.
4. Ocean \_\_\_\_\_ result from the energy of the sun and the rotation of the Earth;
5. I am designing an electric motor for sailboats. I am looking for data about propellers actual \_\_\_\_\_ at different speeds.
6. Use a stern \_\_\_\_\_ to control the kayak's direction.
7. I have developed a computerized yacht \_\_\_\_\_ evaluation and classification
8. Combining satellite \_\_\_\_\_ with speed / safety camera alert devices to get you from A to B safely.

**Fill in the gaps with the words from above:**

Sailing is the art of controlling a boat with large (usually fabric) \_\_\_\_\_ called sails. By changing the rigging, \_\_\_\_\_, and sometimes the keel or centre board, a sailor manages the force of the wind on the sails in order to change the direction and speed of a boat. \_\_\_\_\_ of the skill requires experience in varying wind and sea conditions, as well as knowledge concerning sailboats themselves.

While there are still some places in the world where \_\_\_\_\_ passenger, fishing and trading vessels are used, these craft have become rarer as outboard and modified car engines have become available even in the poorest and most remote areas. In most countries people enjoy sailing as a \_\_\_\_\_ activity. Recreational sailing or yachting can be divided into racing and cruising. Cruising includes \_\_\_\_\_ trips, short trips within sight of land, and daysailing.

**History**

Throughout history sailing has been instrumental in the development of civilization, affording mankind greater mobility and capacity for fishing, trade, and warfare. The earliest representation of a ship under sail appears on a painted disc found in Kuwait dating to the late 5th millennium BC. Advances in sailing technology from the Middle Ages onward enabled Arab, Chinese, Indian and European explorers to make longer voyages into regions with extreme weather and climatic conditions. There were improvements in sails, masts and rigging; \_\_\_\_\_ equipment improved. From the 15th century \_\_\_\_\_, European ships went further north, stayed longer on the Grand Banks and in the Gulf of St. Lawrence, and eventually began to explore the Pacific Northwest and the Western Arctic. Sailing has contributed to many great explorations in the world.

**Energy capture**

Sails are airfoils that work by using an \_\_\_\_\_ set up by the wind and the motion of the boat. The combination of the two is the apparent wind, which is the relative velocity of the wind relative to the boat's motion. Sails generate lift using the air that \_\_\_\_\_ around them, in the same way as an aircraft wing generates lift.

The air flowing at the sail surface is not the true wind. Sailing into the wind causes the apparent wind to be greater than the true wind and the direction of the apparent wind will be forward of the true wind. Some high-\_\_\_\_\_ boats are capable of travelling faster than the true windspeed on some points of sail, see for example the Hydroptère, which set a

world speed record in 2009 by sailing 1.71 times the speed of the wind. Iceboats can typically sail at 5 times the speed of the wind.

The energy that drives a sailboat is harnessed by manipulating the relative movement of wind and water speed: if there is no difference in movement, such as on a calm day or when the wind and water \_\_\_\_\_ are moving in the same direction at the same speed, there is no energy to be extracted and the sailboat will not be able to do anything but drift. Where there is a difference in motion, then there is energy to be extracted at the interface. The sailboat does this by placing the sail(s) in the air and the hull(s) in the water.

The sailing vessel is not maneuverable with the sail alone -- the \_\_\_\_\_ caused by the sail lift would cause the vessel to twist instead of move forward. In the same manner that a plane requires an elevator with control surfaces, a boat requires a keel and rudder. The sail alone is not sufficient to drive the boat in any desired direction. Sailboats overcome this by having another physical object below the water line. This may take the form of a keel, centreboard, or some other form of underwater foil, or even the hull itself (as in catamarans without centreboard). Thus, the physical portion of the boat that is below water can be regarded as functioning as a "second sail."

*Source: <http://en.wikipedia.org/wiki/Sailing>*

## 15. SAILING (2)

**Fill in the gaps with the following words:** apparent, generate, capture, downwind, underwater, predict, heights, true, extract, motion, squeezing, efficiency, foot, friction, upwind

### Energy capture (2)

Having two surfaces against the wind and water enables the sailor to travel in almost any direction and to \_\_\_\_\_ an additional source of lift from the water. The flow of water over the \_\_\_\_\_ hull portions creates a hydrodynamic force. The combination of the aerodynamic force from the sails and the hydrodynamic force from the underwater hull section allows \_\_\_\_\_ in almost any direction except straight into the wind. This can be likened (usproediti), in simple terms, to \_\_\_\_\_ a wet bar of soap with two hands, causing it to shoot out in a direction perpendicular (okomit) to both opposing forces. Depending on the \_\_\_\_\_ of the rig, the angle of travel relative to the true wind can be as little as 35° or greater than 80°. This angle is called the tacking angle. (To change the direction or course of a vessel)

Tacking is essential when sailing \_\_\_\_\_ (uz vjetar). The sails, when correctly adjusted, will generate aerodynamic lift. When sailing \_\_\_\_\_, the sails no longer generate aerodynamic lift and airflow is stalled (gubitak brzine), with the wind push on the sails giving drag (kočenje) only. As the boat is going downwind, the \_\_\_\_\_ wind is less than the true wind and this, allied to the fact that the sails are not producing aerodynamic lift, serves to limit the downwind speed.

Some non-traditional rigs purportedly (navodno) \_\_\_\_\_ energy from the wind in a different fashion and are capable of feats (pothvat) that traditional rigs are not, such as sailing directly into the wind. One such example is the wind turbine boat, also called the windmill boat, which uses a large windmill to \_\_\_\_\_ energy from the wind, and a propeller to convert this energy to forward motion of the hull. A similar design, called the autogyro boat, uses a wind turbine without the propeller, and functions in a manner similar to a normal sail.

Effects of wind shear (smicanje vjetra – promjena pravca, brzina ili i pravca i brzine na malim udaljenostima)

Wind shear affects sailboats in motion by presenting a different wind speed and direction at different \_\_\_\_\_ along the mast. Wind shear occurs because of \_\_\_\_\_ (trenje)

above a water surface slowing the flow of air. Thus, a difference in \_\_\_\_\_ wind creates a different apparent wind at different heights. Sailmakers may introduce sail twist in the design of the sail, where the head of the sail is set at a different angle of attack from the \_\_\_\_\_ of the sail in order to change the lift distribution with height. The effect of wind shear can be factored into (include) the selection of twist in the sail design, but this can be difficult to \_\_\_\_\_ since wind shear may vary widely in different weather conditions. Sailors may also adjust the trim (ravnoteža) of the sail to account for (biti odgovoran za) wind gradient (uspon), for example, using a boom vang (motka na dnu jedra).<http://en.wikipedia.org/wiki/Sailing> - cite\_note-18

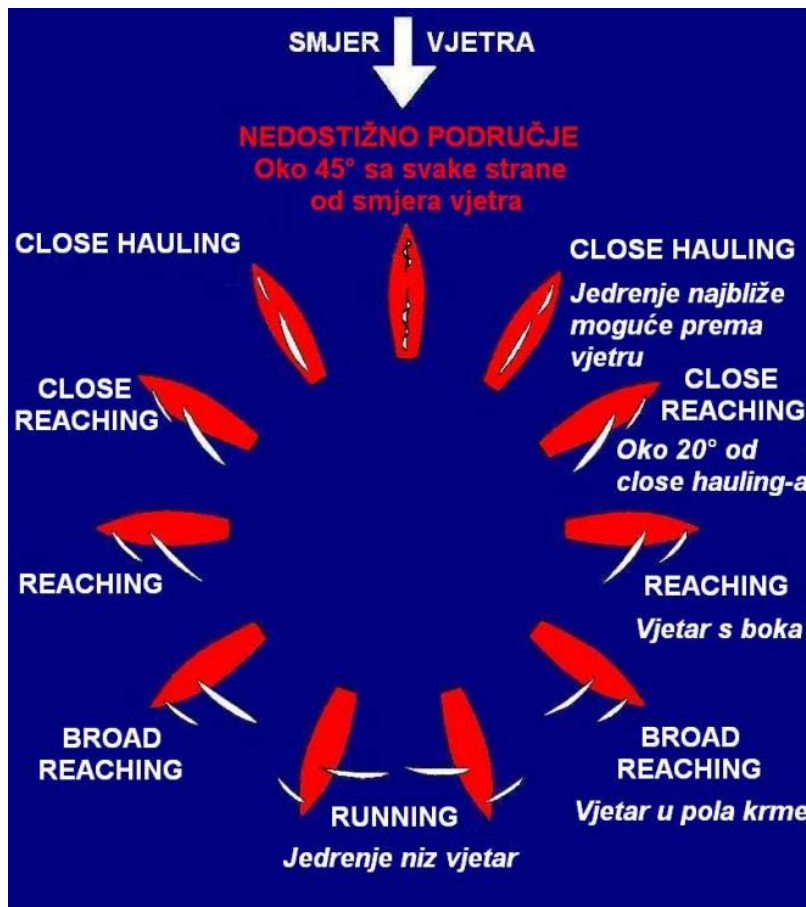
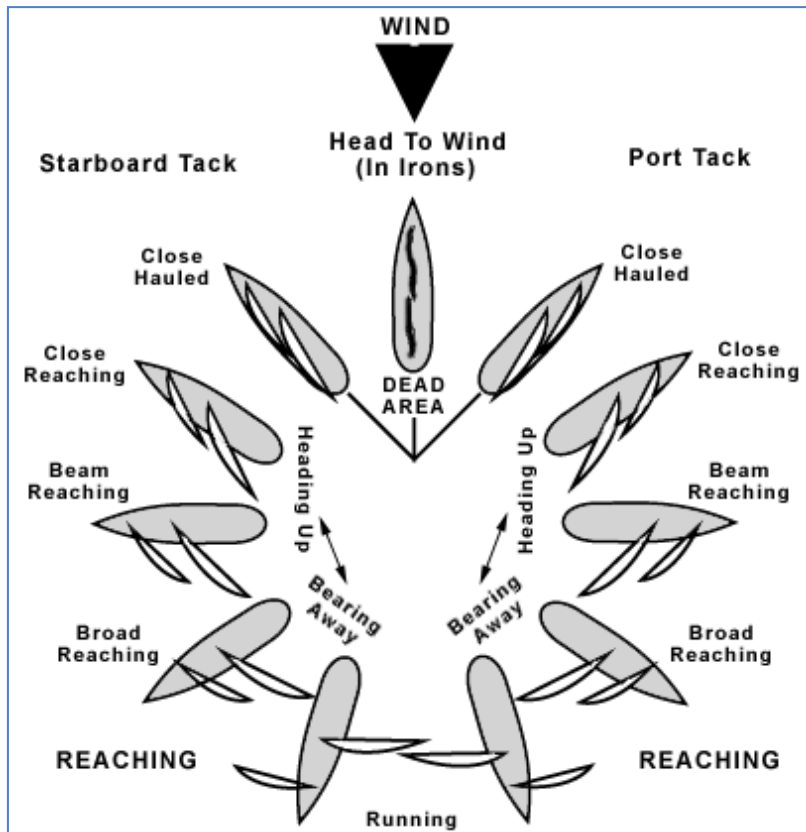
#### Points of sail

The points of sail are the most important parts of sail theory to remember. The no-go zone is about 45° either side of the true wind for a racing hull and sail plan optimized for upwind work. On some cruising yachts, the best course achievable upwind is 50° to 55° to the true wind. No sailboat can sail directly into the wind; attempting to do so leads to the sails luffing (okretati brod u vjetar). There are 5 main points of sail. In order from the edge of the no-go zone to directly downwind they are:

- close haul (often about 45° to the apparent wind - the least angle that the boat and its rig can manage)
- close reach (between close hauled and a beam reach)
- beam reach (90° to the apparent wind)
- broad reach (between a beam reach and running)
- running (close to directly downwind)

The sail trim (and, on smaller boats, centre board/dagger board position) on a boat is relative to the point of sail one is on: on a beam reach sails are mostly let out, on a run sails are all the way out, and close hauled sails are pulled in very tightly. Two main skills of sailing are trimming the sails correctly for the direction and strength of the wind, and maintaining a course relative to the wind that suits the sails once trimmed.

*Source: <http://en.wikipedia.org/wiki/Sailing>*





## 16. POINTS OF SAIL (SMJER JEDRENJA)

**Match the words with explanations:** trim, luff, steerage, perform, on port tack, angle, „in irons“, sheet, boom, vary

1. \_\_\_\_\_ – sailing with the wind coming over the port side of the boat
2. \_\_\_\_\_ - to flap while losing wind
3. \_\_\_\_\_ - lying head to the wind and unable to turn either way
4. \_\_\_\_\_ - the activity of managing or exerting control over something
5. \_\_\_\_\_ - to undergo or show change
6. \_\_\_\_\_ - to adjust (the sails and yards) so that they receive the wind properly
7. \_\_\_\_\_ - to carry out or do
8. \_\_\_\_\_ - the space between two lines or surfaces
9. \_\_\_\_\_ - to extend in a certain direction
10. \_\_\_\_\_ - a long spar extending from a mast to hold or extend the foot of a sail

**Fill in the gaps with the words from above:**

Points of sail describes a sailing boat's course in relation to the wind direction. There is a distinction between the port tack and the starboard tack. If the wind is coming from anywhere on the port side, the boat is \_\_\_\_\_ (na lijevim uzdama). Likewise if the wind is coming from the starboard side, the boat is on starboard tack (na desnim uzdama). Except when *head to wind* (*pramcem u vjetar*), a boat will be on either port or starboard tack while on any point of sail. For purposes of the International Regulations for Preventing Collisions at Sea (međunarodna pravila izbjegavanja sudara na moru) and the Racing Rules of Sailing, the wind is assumed to be coming from the side opposite that which the \_\_\_\_\_ (deblenjak) is carried.

### HEAD TO WIND

At this point of sail the boat is headed directly into the wind. A boat turns through this point of sail as it \_\_\_\_\_ a tack (okretanje). The boat is on neither port nor starboard tack. Since a boat cannot sail directly into the wind, if a boat comes head to wind and loses way and \_\_\_\_\_ (upravljanje), it is said to be "in irons," (u okovima) and may begin to travel slowly backwards (travelling backwards is called *making sternway* – *kretanje krmom*). However, if the vessel is passing head to wind without a loss of way and steerage (such as during a successful tack) then the vessel is said to be "in stays" as opposed to "in irons;" in

fact, the term \_\_\_\_\_ conveys an image of restrictive loss of freedom, and is intended to symbolize loss of control. To recover from being "in irons", the jib (flok) is backed by sheeting (usmjeriti) it to one side, and the tiller (rudo kormila) is moved to the side opposite that to which the headsail is \_\_\_\_\_ (assuming the boat is moving backwards). In a single-sailed boat the "push, push, pull, pull" technique (*i.e.*, "push" the boom towards the wind, "push" the tiller away, and then "pull" the boom and tiller back to their normal positions) can be used, which sails the boat backwards and steers the stern towards the wind. This results in the bow being pushed away from the wind and out of irons. Sailboats are usually put head to wind when raising or lowering sails. In this case, auxiliary (motorized) sailboats will typically be under power (engine running).

## **IN IRONS**

The boat is pointed too close to the wind for the sails to generate any power. The sails will be \_\_\_\_\_ (skretati u vjetar) ("flapping") in the breeze and making noise, like a flag. The size of the \_\_\_\_\_ in which a boat will be in irons will differ, depending on the performance characteristics of the particular sailboat. For example, racing sailboats can usually sail much closer to the wind (*i.e.*, fewer degrees off the wind direction) than cruising yachts. This is known as "pointing higher." (jedriti bliže vjetru) Pointing ability is very important for racing sailboats, as the real goal in a race is almost always velocity made good (VMG) (korisna brzina). VMG is the speed at which the boat is approaching the destination (usually a buoy or Sea mark), as opposed to the speed at which the boat is moving through the water (boat speed). These two speeds almost always \_\_\_\_\_ because, during a race, a boat usually cannot sail directly to the next mark.

## **CLOSE HAULED**

A boat is sailing close hauled (oštro uz vjetar) when its sails are \_\_\_\_\_ in tightly and it is sailing as close to the wind as it can without entering in irons. This point of sail lets the boat travel diagonally upwind. This is a precise point of sail. However, the exact angle relative to the wind direction varies from boat to boat. A boat is considered to be "pinching" ("ukliještit") if the helmsman (kormilar) tries to sail above an efficient close-hauled course and the sails begin to luff slightly.

*Source: <http://www.sailingcornwall.co.uk/Points-of-Sail.html>*

## 17. MARINE RADAR

**Match the words with explanations:** frequency, ancillary, focal, target, emitter, accurately, hazard, mast, encounter, obstruction

1. \_\_\_\_\_ - any point or area aimed at
2. \_\_\_\_\_ - any vertical spar for supporting sails, rigging, flags
3. \_\_\_\_\_ - auxiliary; helping
4. \_\_\_\_\_ - any structure that makes progress difficult
5. \_\_\_\_\_ - a person or thing that sends out
6. \_\_\_\_\_ - risk; peril; danger
7. \_\_\_\_\_ - of or relating to a focus
8. \_\_\_\_\_ - unmistakably
9. \_\_\_\_\_ - to meet, especially unexpectedly; come upon
10. \_\_\_\_\_ - the rate at which a repeating event occurs

**Fill in the gaps with the words from above:**

1. Drivers parking near his house and causing an \_\_\_\_\_.
2. Air Travel is the fastest growing \_\_\_\_\_ of climate change gases.
3. Local centers are typically also \_\_\_\_\_ points for the community life of their areas.
4. Are you sure whether you have identified the \_\_\_\_\_ involved in your work?
5. Every day we \_\_\_\_\_ stresses of one kind or another.
6. In the past they have been the \_\_\_\_\_ of racist abuse.
7. The more \_\_\_\_\_ you can aim, the fewer civilians you will kill.
8. Calculating the \_\_\_\_\_ of a repeating event is accomplished by counting the number of times that event occurs within a specific time period, then dividing the count by the length of the time period. For
9. The vehicle is fitted with a 13 meter telescopic \_\_\_\_\_ for radio communications.
10. \_\_\_\_\_ equipment was provided with each gun.

The acronym RADAR stands for Radio Direction And Ranging. RADAR generates active radio pulses that in turn bounce off targets coming from the direction of its \_\_\_\_\_ point. Early in WWII these systems were integrated in British vessels for use on the high seas. As a result, it has been suggested that RADAR was the most important technical innovation to

come out of the war and this ability to "see in the dark" has become a central technology for marine operations since then.

## **THE MARINE RADAR**

Technologically, there is no primary difference between marine and land-based systems. However, depending on the \_\_\_\_\_ required and the focus of the applied system there can be significant differences in size, physical positioning, and target resolution. In the case of marine systems the goal is to see what is front and around the vessel out-to-the-horizon, so typically RADAR \_\_\_\_\_ are usually positioned at the top of a \_\_\_\_\_, or other vertical structure, in order to maximize the line of pulse.

Once the system is employed it will then be able to "see" other vessels, land masses or other potential obstructions out to the limit of the emitter's range. However, the size and power-generation capability of the particular vessel is critical, since marine operations make their own primary and \_\_\_\_\_ power. Therefore, if a vessel is a large one the power plant will consequently provide better RADAR ranging and target resolution, than a system that is limited by the available power of a smaller private boat, for example.

## **HOW IT WORKS**

RADAR operates on the principles of what is referred to as a "Doppler Shift." If a system pulses a signal at a particular frequency and \_\_\_\_\_ an obstruction the original signal then "bounces back" to the receiver and measures the time the response took in terms of milliseconds, while also measuring the density, amplitude and frequency of the return signal. This electronic response is then converted into a "plot-paint" (chart) represented on a video screen. This subsequently creates a two-dimension visual representation of the vessel's particular position in relation to the \_\_\_\_\_ of interest.

## **CONS**

As mentioned earlier, power consumption is critical to marine operations. The range of a RADAR will be limited by the strength of the signal, so in the case of small vessel co-generation the range of the system will be consequently constrained.

Second, the size of the array (antenna) or rotating emitter will be limited in terms of the resolution of the system. In this case, large system can "see" down the smallest \_\_\_\_\_ on the sea, where smaller arrays may or may not lose this capability depending on the quality of the particular equipment.

## **PROS**

On the pro-side of the equation, however, today's marine RADAR electronics are very cost-efficient and highly-tuned systems, and even small vessels can take significant advantage of the continual technological development.

## **AN INTEGRATED FUTURE**

Because of the need for continual marine miniaturization, many of the better vessel systems now integrate commercial Global Positioning Systems (GPS) in concert with (together with) RADAR technology. This capability allows a vessel to locate itself on the earth down to the meter of position. The ability to not only know exactly where the vessel is at any given point in time, plus the ability to "see" the specifics of the surrounding sea environment, can be a life-saver to a mariner who might be in trouble.

## **FACTS ON MARINE RADAR**

Marine radar is a vital tool for low-visibility navigation aboard ships. Marine radar bounces radio waves off distant targets to determine their bearings and distances and to provide other information about potential \_\_\_\_\_.

## **POSITION FIXING**

Radar reflects off landmasses and provide an electronic outline of the coast. In addition, radar units display the positions of navigational radar beacons. By taking bearings of land features, such as headlands (rt), and of navigational beacons, skippers can plot their positions accurately on a navigational charts---even without global positioning systems.

## **TRAFFIC CONTROL**

Radar reflects off ships at sea. Radar units display all detected ships as targets, and the units monitor those targets for changes in their relative positions. Skippers use radar displays to determine whether other ships are on collision courses---a benefit in low visibility, where skippers are unable to see other ships visually.

## **RANGE**

The curvature of the Earth limits the distance that radar can travel and \_\_\_\_\_ detect objects at sea. The higher that a ship-mounted radar is located, the longer its effective range. A radar assembly mounted 20 feet up a ship's mast can detect hazards up to 50 miles away.

## **POTENTIAL**

New radar units overlay (cover) radar information on LED screens with other navigational tools such as charts, sonar data and weather information. Modern radar is truly a step up from the old foul weather navigational techniques that relied on guesses about bearings and speed.

*Source: [http://www.ehow.com/how-does\\_5137362\\_marine-radar-work.html](http://www.ehow.com/how-does_5137362_marine-radar-work.html)*

## 18. RADAR

### Arrange the words to make meaningful sentences:

1. Target plotting (ucrtavanje) functions, /on the /other /allow / such as in fog./ the course / of other vessels / and speed / to be / for collision / hand, / avoidance, / measured
2. radar / short / of microwave radiation, / Likewise, / emits / which, / pulses / like sound,/ are / by objects / reflected / in its path.
3. information / displayed / The resulting / on a screen / is / as a / representation / surrounding / the boat. / 360-degree pictorial / of the area
4. be / Marine / can also / radar / used / to determine / air / patterns / and precipitation levels. / temperature, / wind / antennas
5. In the / of a / operator, / provides / skilled / precise / and is an invaluable / positioning / aid to / boating safety. / hands / radar
6. will / vessels, / temperatures. / weather / The display / conditions, water / show / depths / other/ and water
7. In a sense, / is / of visual / radar / allowing / to see vessels, / navigation, / buoys / and / at greater / land areas / distances in any / you / conditions./ an extension /

### Put the sentences from above in the correct order

If I could have only one instrument for coastal navigation, I would choose a radar unit.

---

\_\_\_\_\_ During periods of restricted visibility, radar not only provides navigational fixes but helps in collision avoidance and can even reveal uncharted hazards and buoys.

---

\_\_\_\_\_ Color radar uses different hues (nijansa) to identify the intensity of a return. For example, by being able to read the stronger precipitation in a rainsquall (kišna oluja) or thunderstorm, you could choose to avoid these areas. -

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\_\_\_\_\_ On some radar units, the "Guard Zone" alarm generates audio and visual alarms when a target comes within a range. This alarm system can also be switched to the anchor-watch mode for dragging (vući se). For those concerned about power consumption, most of the small-boat radar units come with a standby-sleep-mode conserving 12-volt usage.

Let's discuss now how marine radar works. The fundamental principle may be likened to an echo. A ship, for example, might determine the distance it is to a cliff-like shore by blowing its horn and timing the interval till the echo is received.

---

\_\_\_\_\_ Radar detects the reflected pulses and then calculates the distance to the object at that bearing. It uses the time delay between the transmission of the pulse and the arrival of its reflection. The reflected pulse is then amplified and converted for display on the screen. With the radar antenna scanning the horizon, this process is repeated in every direction.

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A typical radar system consists of three basic components: An R/T unit (transmitter (odašiljač) and receiver also called a transceiver), an antenna (also called a scanner), and a display unit or scope (radarski ekran). In most small radar units, the transceiver is located in the scanner. The transmitter portion of the R/T unit generates radio frequency pulses that are emitted as a beam as the scanner rotates. A switching device interrupts the transmission at regular intervals when it then uses the antenna and receiver unit to pick up radio frequency energy reflected off objects in the path of the transmitted beam.

Your marine radar system will have a display. On the display, you will see a circular pattern extending up to hundreds of miles from your vessel.

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\_\_\_\_\_ The marine radar system includes an antenna. The antenna receives the radar waves bounced back from objects hit by your transmitter. The longer the antenna, the better the reception.

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\_\_\_\_\_ The time it takes for the RF pulse to make the trip from the scanner to the object and for the echo to return is used to calculate the range. Radio frequency energy travels at the speed of light. The return is then displayed on the scope.

*Source: [http://www.ehow.com/how-does\\_5137362\\_marine-radar-work.html](http://www.ehow.com/how-does_5137362_marine-radar-work.html)*



## 19. MARINE NAVIGATION BASICS

### Arrange the words to make meaningful sentences:

1. suitable/ must be/ The skipper/ his duties/ while/ to maintain/ delegating/ tasks/ that are/ to their/ level/ of ability/ able/ the crew/
2. are a positive attitude,/ space/ The important/ a yacht./ and teamwork/ within/ the confined/ qualities/ a sense of humour,/ aboard/ crew/
3. can be judged,/ the passage plan,/ supplies./ that are/ food,/ requirements/ as well as/ and water/ any stops/ required/ to provide/ From/ fuel,/
4. and physically/ sailing/ Especially/ tiring./weather,/ offshore/ mentally/ in rough/ can be/
5. the skipper/ but remains/ With some/ with large crews,/ included/ on call/ is not/ in the watchsystem/ on deck/ at each change/ of watch./ watch systems/ and is/
6. the particular/ their own/ of their crew/ Many experienced/ of the passage./ arrange/ to suit/ needs/ watch system/ and the length/ skippers/
7. are covered/ Check/ details/ and whether/ and crew/ insurance/ for the passage./ the yacht's/ the yacht/
8. of arrival./ destination,/ to inform/ the coastguard/ date/ a yacht on passage/ The coastguard/ of its passage plan,/ and estimated/ and time/ service/ requires/
9. are on board./ pilot books,/ start with/ the relevant charts,/ planning the trip,/ the navigator/ and other references/ making sure/ Passage making skills/ that all/
10. to a safe berth./ guiding/When reaching/ returns/ the navigator/ the boat/ the destination/ to pilotage/
11. to a notebook/ with the track,/ transfer/ When/ any notes/ for/ later./ satisfied/ reference/
12. in the pilot/ the destination/ notes/ about/ information/ book./ Make/ from/ harbour/

### Put the sentences from above in the correct order:

#### Roles of the Skipper and Crew

Running of the yacht, its safety, and the welfare of the crew are the skipper's responsibility. He should be accomplished with every aspect of sailing to inspire the confidence of the crew, along with being a good communicator. 1 \_\_\_\_\_ When learning the skipper's role, the skipper should not undertake passages beyond his level of experience. The skipper's work will be made easier if some crew have passage making experience. The skipper may feel

pressure if there is no experienced crew member for whom some executive tasks can be delegated and must adjust sailing plans to suit the crew's experience level.

2 \_\_\_\_\_ It is ideal if some crew possess good sailing or navigation skills and the crew should be involved in the boat's management and passage planning.

### **Passage Planning**

Passage planning starts some time prior with the skipper, or navigator preparing a detailed navigation plan. Using this plan, an estimate of the number of hours of sailing and any involvement of night sailing can be assessed. An alternative plan taking into account the weather or other factors should be prepared also. 3 \_\_\_\_\_

### **Watch System**

4 \_\_\_\_\_ If the passage is to be enjoyed, all on board should be able to contribute some way to the sailing of the yacht. A watch system divides the crew into two or more watches, one has the task of sailing the yacht, while the other watch rests or prepares meals. Ensure the watch stay alert and are well fed and rested and there is minimum disturbance to the off watch crew by keeping light and noise to a minimum.

When passage making of more than a few hours, all crew members including the skipper, should undertake an altered rest pattern so that a watch system can operate.

The importance of being on time to start watch should be emphasized as the confines (ograničenost) of a small yacht causes tempers to fray (svađa) if the watch on deck is not relieved on time. 5 \_\_\_\_\_ Watch systems are arranged to run from midnight to midnight, splitting the twenty-four hours into periods of four hourly on-watch duty and off-watch rest. To rotate the periods on watch each day, the watches are staggered (arrange) by two dog watches of two hours each in the late afternoon and early evening, during which everyone is usually awake.

There is no need to use a traditional watch system. 6 \_\_\_\_\_

### **Passage Preparation**

7 \_\_\_\_\_ If going abroad, check of all crew's passports to ensure any visa arrangements have been made. Check the yacht's registration papers are on board. Some countries have a requirement that a skipper possess a certificate of competence.

### ***Coastguard Services***

The Coastguard Service in many countries is responsible for managing rescue operations at sea. 8 \_\_\_\_\_ When reaching the destination, the skipper notifies the coastguard of the boat's safe arrival. This system alerts the coastguard to commence a search-and-rescue operation if a yacht is overdue (kasniti).

### **Passage Making Skills**

9 \_\_\_\_\_ After that, passage making begins by navigating from harbour to harbour with pilotage out of the departing harbour to a position called the departure point which is fixed on the chart. Commencing from there, the navigator shapes the course to reach the destination. Periodically the navigator checks that the boat is on the required track. 10 \_\_\_\_\_

### ***Ensuring a Safe Passage***

The track should be carefully checked making sure that it is clear of any danger. Adjust the track to keep away from any charted hazards such as areas where waves break sharply over shallows or where currents meet called overfalls (uzburkano more) or tide races.

### ***Making Passage Notes***

11 \_\_\_\_\_ Calculate the passage's total distance and the distance between turning points (točka okreta) or waypoints (međutočka planirane plovidbe). All track bearings between turning points and details of navigation marks are noted. List the times and heights of low and high water in the area for the sailing days then mark up the tidal atlas with the correct times on each page. 12 \_\_\_\_\_

*Source: [http://www.working-the-sails.com/passage\\_planning.html](http://www.working-the-sails.com/passage_planning.html)*

## 20. DOCKING

**Match the words with explanations:** slip, painter, transom, idle, fender, piling, throttle

1. \_\_\_\_\_ - a surface forming the stern of a vessel, either vertical or canted (nagut) either forwards or aft at the upper side
2. \_\_\_\_\_ - a cushion-like device hung over the side of a vessel to reduce damage resulting from accidental contact or collision
3. \_\_\_\_\_ - a column of wood or steel or concrete that is driven into the ground to provide support
4. \_\_\_\_\_ - A docking place for a ship between two piers.
5. \_\_\_\_\_ - a valve that regulates the supply of fuel to the engine; a pedal that controls the throttle valve
6. \_\_\_\_\_ - a rope attached to the bow of a boat, used for tying up, as when docking or towing.
7. \_\_\_\_\_ - to run at a slow speed or out of gear

**Fill in the gaps with the words from above:**

Leaving a dock or coming into one can be a display of good seamanship. Or it can turn out to be an experience of major embarrassment or, worse, of boat damage. And usually, when the latter happens, they are plenty of people around witnessing your major screw up and shaking their head in disbelief. Dare say it never happened to you :-) Here are some simple guidelines to avoid being embarrassed and/or be in the statistics of the charter company's insurance policy. As in most seamanship topics, the key words are: PREPARATION and SLOW. Boaters coming full \_\_\_\_\_(gas) to a dock are guaranteed of one thing: catastrophe!

### Leaving the Dock (Boat Parked in a Slip)

#### A. Preparation

- Make sure that everything is in order on the deck and in the cockpit.
- Two crews or at least one, should be standing on the foredeck with a long boat hook and a \_\_\_\_\_ at the ready to fend off a potential collision with another docked boat. Never use feet or leg to fend off another boat.
- The dinghy should be tied on one of the front side of the bow, with the \_\_\_\_\_ as short as possible.

- Your engine is now on and \_\_\_\_\_ on neutral.
- Before you do anything else, at this point, you should know 3 things: a) what's the wind direction so you know where it's going to push your bow; b) what is your plan of action, step by step. Your crew should know it too; c) what your path is going to be right after you'll be off your slip. You don't want to improvise here.

## **B. Leaving**

- If the boat is stern to, which it is most of the times, instruct your crew to release the stern lines and bring them on board. Just throw them in the cockpit for the time being, as now is no time for coiling. At the very same time, give a burst forward to the boat and have the foredeck crew release the bow line(s). Keep moving forward very slowly. If you can get out of the \_\_\_\_\_ and the marina by just going straight, then do so. If you have to immediately turn into a channel, keep going until the boat is 2/3 out of the slip. Then start turning your boat slowly but firmly, especially if it is windy, in which case you need a little more power. In all cases, always bear in mind that you need to maintain power in order to keep steerage.
- At this point, you can instruct your crew to remove the fenders and store them. You are out.
- Once you get out of the marina, or just before if there is room and time, instruct your crew to bring the dinghy to the stern and cleat the painter.

## **Coming Back Into a Slip**

### **A. Preparation**

- About 30 minutes before reaching the marina, call the dock master on the VHF. He will tell you which dock/slip you will have to put the boat at.
- Most sailboats, when in reverse, back up to port or starboard, depending on the propeller orientation. Make sure you know how your boat behaves, before entering.
- Before entering the marina: a) Have the crew tie up the fenders (tie up 1 or 2 fenders at the \_\_\_\_\_); b) have a crew bring the dinghy to the bow and tie it on either side with a short painter; c) all the docking lines should be out and cleated. c) Two crews or at least one, should be standing on the foredeck with a long boat hook and a fender at the ready to fend off a potential collision with another docked boat. They will also help you spot the slip where you have to go.

- At this stage, your crew should know exactly what your game plan is, and what everyone has to do. Basically: You steer, 1 crew is assigned to the stern lines and watch, 1 crew at the bow to lasso the \_\_\_\_\_ or cleat to the side dock, 1/2 crew(s) with boat hook and fenders in hands.

## **B. Doing it**

- Once you have spotted your slip, slow down as much as you can but just enough to keep steerage. If you are going too fast, throw the boat in reverse to slow it down.
- Look at the slip, how the wind is blowing and visualize in your mind what you'll do. If necessary go around to see how wind and current push your boat.
- Once your boat is positioned, start backing up slowly but steadily. NOW, if you feel you're going to miss, do not insist: you could start banging on obstacles or other boats. Simply stop your maneuver and go around to start over. No shame. And remember: this is the moment where people on the dock are ready to help, but also watching how skilled a sailor you are!
- Whatever happens: do not yell at your crew.
- Finally you have backed up in your slip. Your foredeck crew should immediately jump on the side dock to round up the bow line around the dock cleat, or lasso the line around the piling. In both cases, he/she should do it in a way that he can keep slacking it off (popuštati) as you keep backing up.
- Once your transom is close enough to the dock, have your stern crew either jump on the dock with one of the stern lines, or throw the lines to some help on the dock. Immediately stop the boat. Adjust the length of your lines.

## **Coming to a Regular Dock (Fuel Dock for Ex.)**

Everything above remains the same, except:

- Tell your crew in advance on which side you're going to dock, so they can tie up the fenders accordingly. If your boat backs to the port side, you want to dock on your port side. Ideally, you also want to dock upwind.
- Instead of backing up your boat into a slip, you are going to approach the dock at a very shallow angle and very slow, but remember: keep steerage.
- When your bow is about 2 to 3 feet from the dock, throw your engine in reverse, and your stern will start to back to port, closer to the dock.
- Your crew(s) should step on the dock, or throw the lines to helpers on the dock.

- If you are just refueling or taking on water, a bow line, stern line and one spring line are enough. If you intend to stay longer, you will need 2 spring lines.

*Source: <https://www.sailonline.com/seamanship/boat-handling/docking-avoid-the-embarrassment>*

## 21. SAILBOAT MOORING

**Match the words with explanations:** mooring ball, trailing, snub, bridle, to veer, to deploy, high season, snag, round up

1. \_\_\_\_\_ - to distribute systematically
2. \_\_\_\_\_ - an unforeseen or hidden obstacle
3. \_\_\_\_\_ - a span of chain, wire, or rope that can be secured at both ends to an object and slung from its centre point
4. \_\_\_\_\_ - a ball used to keep one end of a mooring cable or chain on the water's surface so that ships or boats can tie on to it
5. \_\_\_\_\_ - to check the movement of (a rope or cable running out) by turning it quickly about a post or cleat
6. \_\_\_\_\_ - to drag or be dragged along, brushing the ground
7. \_\_\_\_\_ - turn into the wind
8. \_\_\_\_\_ - to change the course of a ship by turning the stern to the wind while advancing to windward
9. \_\_\_\_\_ - the most popular time of year at a holiday resort

**Fill in the gaps with the words from above:**

We all have seen boats arriving at an anchorage with the intent of grabbing a moorings ball for the night. We also have seen some steaming at full speed straight to the ball when it is the last one available, at the risk of demolishing other boats in the neighbourhood. Now try to grab a mooring ball when the boat is doing 5kts.!

Here are some pointers about properly using a mooring ball safely.

1. Make sure you arrive early, especially in the \_\_\_\_\_. And more specifically if the anchorage is not too safe to drop an anchor in, like, for example, Cooper's Island in the BVI. If you're late, and no mooring ball is available any more, you will have no more time to go somewhere else before nightfall, and you might be forced to anchor in a place you don't feel comfortable to do so. Not a good idea.
2. Before arriving at the anchorage, and after you have dropped your sails, grab your binoculars and spot a couple of balls you'd like to settle on.
3. Shorten your dinghy painter a lot so that the dinghy is right behind your stern and the painter is not \_\_\_\_\_ in the water in case you have to manoeuvre.



4. Prepare a \_\_\_\_\_ (spojnica) to put through the eye of the mooring line, and fasten it to one of the bow cleats. It is very important to use a bridle since, very often, the moorings ball line is kind of short. Thus, without a bridle, your boat would pull hard on the ball as she will "sail" on the mooring.
5. A crew has to grab the hook and stand on the bow. He/she will guide you with hand signals toward the ball (arm extended in the direction of the ball.)
6. Approach upwind and reduce speed early enough that you won't pass the ball. Try to calculate in a way that you will arrive at Okts. just letting the boat die on the ball.
7. The crewman grabs the mooring line, passes the bridle line through the eye of the mooring line and secures the other end of the bridle to the other bow cleat.
8. Additionally, in some cases and especially if the weather is rough, it is recommended you tie a second line directly between your boat and the \_\_\_\_\_ itself, as a safety precaution. Although not too usual, it happens that some mooring lines are not very well maintained. As a result, they may break, leaving your boat drifting. Check the mooring line to make sure it is not too chafed and is still in good condition.

### **Med Mooring Technique**

As its name indicates, the Med Mooring Technique is a manoeuvre you will *have* to master if you charter in the Med because you will have to spend a lot of harbour nights. Here are the steps and checklists.

1. Avoid screaming at your crew.
2. Before you enter the harbour, you might want to call the Harbour Master on your VHF and ask if there are some specific instructions you might need. He might also assign you to a particular transient (privremen) area (like dock B, south of the harbour.)
3. You also want to know which way your boat backs up, if you have never tried this before. Sailboats, when backed up, have a strong tendency \_\_\_\_\_ to one side or the other, depending on the propeller rotation.

Gear and things to have on the ready:

- Stern lines coiled and ready \_\_\_\_\_ freely.
- The anchor person has to make sure the anchor chain is going to deploy freely, without \_\_\_\_\_(zapreka).
- All fenders tied to the side and 1 or 2 at the stern. Also a good idea to have a crew with a free fender ready to fend off anywhere necessary.

- Binoculars.
  - Hand-held VHF if the harbour Master will communicate with you.
4. When you enter the harbour, if it is large, use your binoculars to locate whatever spot the harbour Master has assigned to your boat, or, if not, which part of the dock you feel comfortable with.
  5. Bring the dinghy to the front side of your boat.
  6. As much as possible, you want to choose a spot lying in the same direction as the wind, since it is much trickier to do this with the wind on your beam. The harbour master in Gustavia, St Barts, FWI, for example, does not allow bareboat charterers to med-moor in the harbour when it is too windy, as the main wall is perpendicular to the wind.
  7. If room allows it, make a pass in front of the spot. This will give you a better idea of the space and show some potential obstacles you might not have seen from farther away.
  8. Now \_\_\_\_\_ (okrenuti u vjetar) the boat. When you do this, beware of other boats' anchor rodes, as some can lie pretty far up their bow. Start backing up in the direction of the spot. You will need to get some steerage speed when doing this. Drop your anchor when your stern is roughly at the bow of the neighbour boat. The anchor crew lets the chain run.
  9. About 5 feet from the wall, instruct the anchor crew to \_\_\_\_\_ the anchor, usually by braking the windlass. Hopefully, the anchor will dig at this point. Keep backing up hard until you are about 2 feet off the dock. Usually, at this point, you can throw your lines to one of the spectators on the dock — you know, those guys watching and waiting for you to screw up. If nobody is ashore, a crewmember will have to climb up the dock somewhat, to tie the lines through dock cleats or bollards. One of the techniques I like is to pass the lines around the cleats ashore and return them to the boat. This allows adjusting the lines from the boat and a fast release when casting off, without help from someone on the dock.
  10. Once the stern lines are properly secure, take up on the anchor rode and adjust your position to the dock so that your transom is not going to bump into it but is yet close enough to allow your crew to board and leave the boat.
  11. Leaving your spot is simple. Release your stern lines first and bring them on board. The anchor crew hauls up the anchor while the helmsman slowly moves the boat forward.

*Source: <https://www.sailonline.com/seamanship/boat-handling/mooring-technique>*

## 22. ANCHORING

**Match the words with explanations:** strain, furl, taut, rev up, snubber line, entanglement, bow roller, cranking, overshoot

1. \_\_\_\_\_ - line running from a bow cleat to a point on the anchor rode
2. \_\_\_\_\_ - twisted together into a confusing mass
3. \_\_\_\_\_ - a great or excessive pressure
4. \_\_\_\_\_ - tightly stretched; tense
5. \_\_\_\_\_ - to increase the speed of (a motor, for example)
6. \_\_\_\_\_ - turning a handle
7. \_\_\_\_\_ - to pass swiftly over
8. \_\_\_\_\_ - to roll up and secure
9. \_\_\_\_\_ - a fitting at the top forward section of a boat's bow used for raising and securing an anchor in place

### **Fill in the gaps with the words from above**

Very often, we see charterers showing up at an anchorage, and then the "anchoring show" begins. While the sight of the husband/wife/children/friends screaming at each other provides great entertainment, it usually ends up in poor anchoring and in a potentially dangerous situation for the charterer and its neighbours, including you! The situation is sometimes so bad that serious boaters simply *move* to another spot just because they do not want to be near a bareboat charterer. So we felt a quick refresher would be in order. We are not going to get into great technicality here. Just some basic stuff that many charterers seem to ignore completely. The keys to good anchoring are: *preparation* and *slow manoeuvring*.

### ***I - Setting Anchor***

1. Try to arrive at your anchorage relatively *early*, with enough light to locate potential reefs and other hazards. Besides, if you get somewhere too late, and for some reason you cannot anchor (no room left for example), you need to have extra time to go somewhere else before nightfall.
2. Arrange a set of simple hand signals with the crew who will be at the bow to operate the anchor. Therefore, no need to scream and become frustrated. Also, at this point, we assume all your sails are dropped. If not, it's really time to do it now. The crew manipulating the anchor and windlass should wear *gloves* and *deck shoes* as a minimum protection.
3. Always anchor under power only. At this stage, all sails should be \_\_\_\_\_ tight.

4. Once you are on the premises, take a tour of the anchorage at *very slow speed* to:
  - \* Get a sense of where you would like to be for the night.
  - \* Spot the sandy areas where your holding will be best. If possible avoid grassy areas where it is very difficult to set up anchor.
  - \* Beware of noisy spots due to a band at the beach bar for example. Your cruising guide will usually tell you that.
  - \* Check the depths. Recommended lengths: if you only have chain, your scope ratio is *at least 5 to 1* (ex.: if depth is 20 ft + aft from roller to the water, let 125 ft. of chain out. More in strong winds.) If you have chain and rope, your ratio is 7 to 1. *Note:* it is not the depth where the boat lays, which can be much greater or less than where the anchor is.
  - \* Shorten the dinghy painter all the way, to avoid the painter \_\_\_\_\_ in the propeller. This *does* happen!
  - \* The anchor and the chain should be clear, and the anchor ready to be dropped, slightly disengaged from the \_\_\_\_\_ (pramčani valjak).
5. Once you have spotted your favourite place:
  - \* Make sure you will have enough room to swing without hitting any other boat.
  - \* If you are far from any other boat, approach facing the wind at very slow speed and simply drop your anchor where you want it set.
  - \* If you're anchoring among other boats, drop your anchor off the beam (or the stern) of another boat, therefore ensuring no boat will hit another when swinging.
  - \* Now stop the boat completely.
6. At this point, the anchor man should let about 2/3 of the desired length out. Now just let boat sit and settle for a few minutes. Then with the anchor man still at the bow, start *backing up the boat gently* to lay down the rest of the chain desired length. Let the boat settle again. Then put the engine in idle reverse position. The bow crew rests one foot lightly on the chain between the windlass and the bow roller. This accomplishes 2 things:
  - a) You're making sure the chain does not "jump", which would mean the anchor is not set. If this is the case, you will feel the chain literally jumping under your foot. Let more chain out and redo #5, until the chain remains \_\_\_\_\_ (zategnut) under your foot when backing up.
  - b) If the anchor is set, backing up the boat really "digs" the anchor deeper. Complete the digging process by gradually \_\_\_\_\_ (dati puni gas) the engine in reverse for about 30 sec. Visually check that the boat does not drag. When the anchor is set, you can cut off your engine.
    - \* If the anchor is NOT set, restart at #5 until you're satisfied.

7. Take your snorkel mask and fins and go swim over the anchor to *visually* check it is properly dug in the sand. This is very important. We all have seen countless people arrive at an anchorage, drop the hook with a few feet of chain or rope, and..that's it. This is a disaster waiting to happen.
8. Once you feel comfortable with everything you've done, take the final step and set up a \_\_\_\_\_. Your boat should have one provided by the charter company.
9. Lastly, for the next hour, and then periodically after that, visually check that the boat is not dragging by taking precise bearings ashore and verify you are not moving.
10. If it is extremely windy or you are expecting squalls or a storm during the night: every 1 to 2 hours check on the anchor and the neighbours' position. Not everyone is willing to do that, but it is just good seamanship. Now if the weather is *really* bad, set an anchor watch for the night by rotating your crew. rare but it can happen.

Most situations you are likely to encounter while chartering can be handled with a single anchor. The 2-anchor set up is more complicated, can be a pain if you have to leave quickly, and, again, is rarely justified, providing you are properly applying the above technique.

## ***II - Dragging Situations***

1. If one of your *neighbours* drag. During the day, immediately call the attention of the other boat crew. Prepare fenders to avoid damage to you boat.
2. During the night, if you are sound asleep, you might become aware of it only when you hear the other boat hit yours. Wake up your crew and get on deck immediately. Start your engine and keep it idling. Try to wake up the crew of the other boat. Prepare fenders and do as in the day procedure.
3. If *your boat* is dragging. During the day, not a major problem. Start your engine and keep it idling. Try to pay out more chain or rope. Wait a few minutes to see if the anchor resets itself. If not, you will have to re-anchor.
4. During the night, wake up your crew and get on deck immediately. Start your engine and keep it idling. Try to pay out more chain or rope. Wait a few minutes to see if the anchor resets itself. If not, you will have to re-anchor. Turn your depth sounder on and try to find another spot to anchor. If you have to do that, *turn off all the lights* on the boat to get the best night vision possible. Move to another place at *extremely* slow speed.

### **III - Weighing Anchor (podići sidro)**

1. Start your engine. Most charter boats require the engine on to operate the windlass. Have someone at the helm looking at you and your hand signals at all times.
2. Grab the windlass remote control and stand on the most forward point at the bow. Observe which direction the chain is lying in. If the windlass does not operate with enough torque, ask the helmsman to rev up the engine.
3. Using hand signals, instruct the helmsman to move the boat forward *very slowly* in the direction of the chain. Make sure you have the helmsman stop the motion before you \_\_\_\_\_ (prebaciti) the anchor.
4. Start cranking (savijati) the chain up while it is slack. When you get to the line, stop cranking and simply remove it. Then resume \_\_\_\_\_. When the chain is taut again, instruct the helmsman to move the boat forward again. The whole idea here is to avoid using the windlass to move the boat forward, as this causes unnecessary \_\_\_\_\_ (pritisak) on the windlass shaft (osovina) and on the chain roller.
5. At one point you will find the boat straight above the anchor. Finish cranking the chain up all the way until it settles on the roller.
6. Signal the helmsman that the boat is free and get back to the cockpit to help with the main (if it is already raised.) You're done.

#### **Match two parts to form a sentence:**

1. Make sure you will have enough room...
  2. At this point, the anchor man should...
  3. Take your snorkel mask and fins and go swim over ...
  4. During the night, wake up your crew...
  5. Using hand signals, instruct the helmsman ...
- 
- a) to move the boat forward *very slowly* in the direction of the chain.
  - b) the anchor to *visually* check it is properly dug in the sand.
  - c) to swing without hitting any other boat.
  - d) and get on deck immediately.
  - e) let about 2/3 of the desired length out.

Source: <https://www.sailonline.com/seamanship/boat-handling/anchoring-technique-a-hand-signals>

## 23. TIDAL STREAMS AND TIDAL CURRENTS

**Rearrange the jumbled letters:**

- |              |                 |
|--------------|-----------------|
| a) oerth     | h) appriatero   |
| b) ghthei    | i) desti        |
| c) appedli   | j) ownkn        |
| d) reringfer | k) non-dicperio |
| e) oidav     | l) saingli      |
| f) llfaing   | m) rinfoonmati  |
| g) caedll    | n) ctionsrreco  |

**Complete the sentences with the words from above, prepositions, adverbs and auxiliary verbs**

These movements of water are 1 \_\_\_\_\_ in North America as currents and in Britain as tidal streams. Currents to the English are the 2 \_\_\_\_\_ movements of water caused \_\_\_\_\_ the major wind systems of the world including the Gulf Stream, and the North Atlantic Drift (sjevernoatlantska struja).

In tidal waters, knowing the height \_\_\_\_\_ the tide and the direction of the tidal stream/current is important for safe navigation. Some areas have enormous tidal ranges of 11 m or more, whereas others have very small ones. Areas \_\_\_\_\_ large tidal ranges may seem daunting, but they are not difficult to cope \_\_\_\_\_ once you know the relatively simple procedures \_\_\_\_\_ calculating tidal heights and stream/currents.

### **Tidal Information**

Tides are the vertical rise and fall of the surface of the sea, caused by the gravitational attraction of the moon and, \_\_\_\_\_ a lesser degree, the sun. Rotation of the earth causes a semi-diurnal tide in most parts of the world. In 3 \_\_\_\_\_ words, there is a tide with two high waters and two low waters every 24 hours.

Other parts of the world experience a different effect, due \_\_\_\_\_ the moon's path and other geographical influences, and have only \_\_\_\_\_ high and low water each day. Called a diurnal tide, it occurs mostly in the tropics. Diurnal tides usually have small tidal ranges.

Other places have a combination of diurnal and semi-diurnal tides, two high and low waters every day of various heights and \_\_\_\_\_ called mixed tides.

### **Information Sources**

Tide tables for local areas \_\_\_\_\_ issued \_\_\_\_\_ harbour authorities and document tidal time and height information for each day of the year plus the 4 \_\_\_\_\_ found in nautical almanacs. It is impractical for the almanac \_\_\_\_\_ include full details for all the ports \_\_\_\_\_ its area, so a system of "standard" and "secondary" ports is used.

The almanac provides a complete tide table \_\_\_\_\_ each standard port, showing the times and heights of high and low water for every day of the year. A diagrammatic tidal curve allows calculation of tide 5 \_\_\_\_\_ for any time between high and low water.

Tidal information for smaller, secondary ports \_\_\_\_\_ provided as 6 \_\_\_\_\_, known as tidal differences. These are applied to the time and height data from the standard port to find time and height \_\_\_\_\_ the secondary port.

Electronic calculators and software to calculate tidal times and heights at thousands of ports \_\_\_\_\_ the world are available. This allows the navigator to find the time and height of tide at any time and place without \_\_\_\_\_ 7 \_\_\_\_\_ to tables and doing calculations and is accurate enough for most purposes.

Tide tables give the times of high and low water in the port's zone time or standard time, but some local tables show times as clock time corrected for daylight saving time (ljetno računanje vremena). Be aware \_\_\_\_\_ which system your chosen almanac uses, and convert \_\_\_\_\_ clock time if necessary. When sailing between two countries be aware they may be in different time zones and amounts of daylight-saving time.

Tide tables show their base time zone on each page and show the correction that must be 8 \_\_\_\_\_ to convert to local clock time. When calculating secondary port information from standard port data, calculate in zone time and convert the answer to local time to 9 \_\_\_\_\_ errors.

### **Estimating Tidal Heights**

Tide tables display the height of the tide simply \_\_\_\_\_ high and low water but the need to know its height at other times requires the use of the almanac's tidal curve.

#### **Tidal Curves**

Finding out the depth of water at a time other \_\_\_\_\_ high water and low water when crossing a shallow water, there is a requirement to know exactly when the tide's height is enough to allow the boat to pass over.



The tidal curve is represented as a graph which plots the movement of a tide over a complete tidal cycle. With the cycle varying between spring and neap 10 \_\_\_\_\_ then two curves are shown. Spring tides are represented by a solid line, and neap tides by a dotted one. Use the appropriate curve \_\_\_\_\_ estimate what time the tide will reach a specific height or the tide's height at a specific time.

The nautical almanac offers curves \_\_\_\_\_ each standard port and these can be used to obtain the time or height of tide \_\_\_\_\_ the secondary ports. Simply enter the tidal data given for the secondary port by calculating the time of high water then enter these figures \_\_\_\_\_ the tidal curve, and proceed as for a standard port.

The rising and 11 \_\_\_\_\_ of the tide causes a horizontal flow of water known as tidal streams or tidal currents. Tidal streams or tidal currents are strong during spring tides (jaka plima) and weak during neap tides (najniža plima). The tidal stream/current's direction at any time is called its set, and the strength is 12 \_\_\_\_\_ its drift.

When shaping a course or plotting a position, you need to know both the set and the drift for the area. Tidal stream/current set and drift information is obtained \_\_\_\_\_ the chart, an almanac, or a tidal atlas that covers the area of 13 \_\_\_\_\_ .

Positions where tidal streams or tidal currents have been measured are marked by a letter on the chart within a diamond shape, and are referred \_\_\_\_\_ as tidal diamonds. For every tidal diamond, a table on the chart shows the set and drift for spring and neap tides for each hour before and after high water \_\_\_\_\_ the standard port.

### **Tidal Atlases**

Tidal atlases give tidal stream/current information for specific areas as a separate page for each hour before and after high water at a standard port. Every page shows the set of the stream/current by arrows and the drift at spring and neap tides in figures. Drift may be shown in knots and tenths of a knot.

The tidal atlas has the high water page marked up with the time of high water for the day at the standard port, with each page before and after marked up with the 14 \_\_\_\_\_ time. Choose the appropriate page to find the tidal arrow nearest your position.

*Source: <http://www.working-the-sails.com/tides.html>*

## 24. YACHT EMERGENCY DRILLS

### Rearrange the jumbled letters:

A stbyand

B cueres

C walerde

D stoedw

E erovardbo

F ardabo

G canedcell

H aistances

I compwayanion

J oylibufe

K preingvent

L egencymer

### Fill in the gaps with the words from above:

At sea, a potential life-threatening situation is treated as an emergency with successful corrective (ublažujući) action downgrading (sniziti kategoriju) it to an event, but any unsuccessful action will result in the need for help. Be prepared for any emergency by practicing the following emergency drills (obuka za hitne slučajeve).

### Marine Emergency and Survival Equipment

The sudden onset (nastup) of an emergency can be a mind-numbing (mučan) experience. Dealing with the emergency should be methodical requiring all crew members to know where the emergency and survival equipment is **1** \_\_\_\_\_ and its use. A detailed emergency and survival equipment stowage plan must be displayed in the saloon or available in some conspicuous (uočljiv) place and a drill of responses to emergencies must be carried out beforehand. A Panic Bag containing essential survival equipment should be stowed in the **2** \_\_\_\_\_ (brodske stepenice).

## **Marine VHF Radio and Mayday Calls**

The VHF radio operation is prominent (značajan) in **3** \_\_\_\_\_ drills and it is the accepted method of alerting other boats or agencies to an emergency. 'Pan' and 'Securite' are advisory emergency calls, alerting the outside world that there is a problem with the boat but a request has not been made for help. While the third call 'Mayday' is the call for immediate outside **4** \_\_\_\_\_.

The standard practice is to alert rescue agencies to a possible 'Mayday' situation as the emergency develops, rather than a frantic (lud) Mayday call when the situation is out of control. The purpose of both the 'Pan' and 'Securite' calls puts others on **5** \_\_\_\_\_ enabling them to fix your position prior to what may be a Mayday call. If a Mayday call is given it is usually at the last resort (zadnji izlaz, rješenje) and when there is insufficient time to give the essential information on who, where and what is involved. The likely emergencies are man overboard, being holed (probiti) or running aground (nasukati se), fire, and medical emergencies.

## **Man Overboard**

The priority when a person falls **6** \_\_\_\_\_ is alerting the crew with a cry of "man overboard". The seriousness requires every crew member to do and use everything - including daytime orange smoke, nighttime white flares (bljesak) or strobe (flashing) lights or dye marker - to locate and **7** \_\_\_\_\_ the person in the water.

An essential requirement is to mark the position of the man overboard with a dan buoy with attached life ring, or orange smoke or strobe light, with an assigned crew member pointing at the man overboard. If possible, throw the **8** \_\_\_\_\_ upwind of the casualty so that it drifts towards him.

The skipper decides on a recovery procedure, and quickly briefs the crew. During the rescue, a spare crew should be delegated to issue a Securite' call on Channel 16 on the VHF radio and activate the MoB position function on the GPS unit. If a visual contact is lost with the victim for more than a minute, issue a 'Mayday' call for outside assistance. It can be **9** \_\_\_\_\_ if the man overboard is located.

## ***Recovery under Power***

If motoring when a person falls overboard, immediately turn the boat towards him swinging the stern away as he passes down the side **10** \_\_\_\_\_ him being caught by the propeller. When the person clears the stern, put the helm (kormilo) hard over the opposite way which

starts the boat turning back towards the casualty and approach upwind. Stop the boat with the person just forward of the shrouds (čelična užad koja veže jarbol s bokom broda), keeping him away from the propeller. When the casualty has been secured to the boat with a line, stop the engine and bring him **11** \_\_\_\_\_.

### ***Lifting Onboard***

Once you are alongside the casualty, immediately secure him to the boat with a line tied under his armpits using a bowline knot (pašnjak). To get the casualty aboard depends on his ability to help himself (if conscious), the height of the deck out of the water, and crew strength. It is easier to recover a man overboard when under sail on the **12** \_\_\_\_\_ side where the boat's heel(nagib) reduces the freeboard (gaz).

It is impossible to physically pull a wet, heavy, and unconscious person out of the water, so employ some form of lifting tackle (oprema). Have a tackle ready for this purpose and stow it where it can be quickly reached. This tackle can be attached to a spare halyard (podigač jedra) or to the end of the main boom so find an arrangement appropriate for your boat, and practice using the system. If no tackle is available, use a sheet (škota, konop jedra) or two halyards around two different winches.

*Source: [http: www.working-the-sails.com/yacht\\_emergency\\_drills.html](http://www.working-the-sails.com/yacht_emergency_drills.html)*

## 25. EMERGENCY DRILLS – HOLING AND LEAKS

**Match the words with explanations:** penetration, go aground, to stem, rip away, debris, dismasting, give way, to issue, tow off, immerse

1. \_\_\_\_\_ - the ability to make way into or through something
2. \_\_\_\_\_ - to tear or strip something away
3. \_\_\_\_\_ - to draw or pull behind by a chain or line
4. \_\_\_\_\_ - to stop (a flow, eg. of blood)
5. \_\_\_\_\_ - to give or send out, or to distribute, especially officially
6. \_\_\_\_\_ - to remove or break off the mast of
7. \_\_\_\_\_ - to put completely under the surface of a liquid
8. \_\_\_\_\_ - to collapse from or as if from physical pressure
9. \_\_\_\_\_ - the scattered remains of something broken or destroyed
10. \_\_\_\_\_ - stuck in a place where a ship can no longer float

**Fill in the gaps with the words from above:**

In the sea frequently floating \_\_\_\_\_ (krhotine, ostaci) such as huge containers, pose a passive hazard to holing (probiti) a hull. A hole six inches in diameter will sink a keelboat quickly, giving no time \_\_\_\_\_ a 'Mayday' call on the VHF radio. First priority of the emergency drill to gather essential survival gear, put on life jackets and launch the life raft (gumeni čamac).

If the hull is holed above the waterline, such as a collision, there is time to assess the situation and take action. If below the waterline immediate action is required to prevent the boat from sinking. The priorities are to eliminate or minimize the \_\_\_\_\_ of water and to commence pumping. With most yachts' batteries being placed down low, it is advisable a Securite' call be made on the VHF radio, alerting the coastguard to a possible emergency, before the batteries become \_\_\_\_\_.

Turn on all electric bilge pumps (potopne/kaljužne pumpe), work the manual pump. The source of the water may not be obvious so suspect a broken engine-cooling water hose or toilet hose (cijev), or a failed seacock (oplatni ventil) or through-hull fitting (prolaz). If from a hose, turn off the sea cock and be prepared by having a wooden plug (zatvarač) tied to the sea cock. If water is coming in from a hole in the hull, it is easy to locate unless it is behind panelling requiring \_\_\_\_\_ interior furniture \_\_\_\_\_ to expose the source of the leak.

The objective is to block the hole by whatever means available. When the hole is blocked from the inside, it may be possible to lower a sail on the outside over the hole by securing it to the hull to hold it down.

The depth below the waterline of the hole determines the water pressure, so a hole low down creates a high-pressure jet (mlaz) of water and is difficult to stop. A hole near the waterline may be able to be controlled by heeling (nagnuti) the boat and raising the hole out of the water or reducing the pressure.

### **Holed Going Aground**

If the boat \_\_\_\_\_ and as a result the boat is holed, it is not necessarily lost. If there is an ebbing tide (oseka), a temporary repair may be made with a repair kit, plywood (šperploča) or plastic sheet and duct tape (ljepljiva traka). The greatest damage occurs when the boat settles onto rocks as the tide recedes (opadati) requiring the use of fenders (bokobran) to protect the hull from damage. Before inflating either the dinghy or life raft as use in hull protection consider whether they may be needed if the situation develops into an emergency.

Use a Securite' call on the VHF radio, advising the coastguard of your problem, but be wary (oprezan) in accepting offers of professional assistance to \_\_\_\_\_ the boat \_\_\_\_\_ unless there is a need and an agreement has been made under insurance terms or a specified fee.

If the flow is unable to be \_\_\_\_\_ (zaustaviti), and pumps fail to prevent the water level rising, it must be accepted that sooner rather than later it will sink. A decision to abandon the boat should be instigated (poticati) with a 'Mayday' call on the VHF radio giving who, where and what together with a description of the action taken to ensure that rescue services or local ships will locate and come to your aid.

### **Dismasting**

\_\_\_\_\_ (lomljenje jarbola) occurs when a piece of rigging \_\_\_\_\_ and usually happens in rough conditions. The mast falls roughly downwind with the sails pulling it over the side. When this happens, the boat motion changes dramatically. The motion is quick making it difficult to stand and work on deck.

The priority is to prevent broken pieces of mast, which are still attached to the boat, from damaging the hull or decks. Try to recover as much of the broken mast for use in constructing a jury rig (improvizirani jarbol). Recovery is impossible in rough weather so cut away the rig to prevent it from holing the hull with a large pair of bolt cutters (kliješta).

Assess the situation and the probability to reach port under power if there is sufficient fuel. Do not start the engine until a check has been made ensuring that there are no ropes in the water that will foul the propeller. If this is not an option, then improvise a jury rig that allows sailing downwind.

**Translate the following sentences into English:**

1. Trup je oštećen pri nasukavanju jahte 2006. godine na pličini kod Betine, na Murteru, a jahta se trenutačno nalazi u Splitu.
2. Nitko na brodu nije znao razlog lomljenja jarbola, jer u trenutku kada se jarbol slomio nije bilo ništa neuobičajeno niti sa vjetrom niti sa morem.
3. U splitskoj ACI marini djelomično je potonula motorna jahta dužine 15 metara jer je došlo do prodora mora u unutrašnjost.

*Source: [http://www.working-the-sails.com/yacht\\_emergency\\_drills.html](http://www.working-the-sails.com/yacht_emergency_drills.html)*

## REFERENCES

<http://en.wikipedia.org/wiki/Yachting>  
<http://yacht4sale.net/yacht-construction/>  
[http://quote.luxinsure.com/sailing\\_yachts.html](http://quote.luxinsure.com/sailing_yachts.html)  
<http://www.ultramarineyacht.com/blog/tag/semi-displacement/>  
[http://www.primidi.com/yacht\\_broker/locations](http://www.primidi.com/yacht_broker/locations)  
<http://www.net-charter.com/pn.asp?id=36>  
<http://www.worldheritage.org/article/WHEBN0001532776/Yacht%20charter>  
<https://www.sailonline.com/boat-charter/helpful-files-a-resources/charter-boat-checklist>  
[http://www.cargohandbook.com/index.php/Boats\\_and\\_Yachts](http://www.cargohandbook.com/index.php/Boats_and_Yachts)  
<http://en.wikipedia.org/wiki/Rigging>  
[http://sailing.about.com/od/typesofsailboats/ss/Keelshapes\\_2.htm](http://sailing.about.com/od/typesofsailboats/ss/Keelshapes_2.htm)  
[http://www.working-the-sails.com/rules\\_of\\_the\\_road.html](http://www.working-the-sails.com/rules_of_the_road.html)  
[http://www.working-the-sails.com/rules\\_of\\_the\\_road.html](http://www.working-the-sails.com/rules_of_the_road.html)  
<http://en.wikipedia.org/wiki/Yachting>  
<http://en.wikipedia.org/wiki/Sailing>  
<http://www.sailingcornwall.co.uk/Points-of-Sail.html>  
[http://www.ehow.com/how-does\\_5137362\\_marine-radar-work.html](http://www.ehow.com/how-does_5137362_marine-radar-work.html)  
[http://www.working-the-sails.com/passage\\_planning.html](http://www.working-the-sails.com/passage_planning.html)  
<https://www.sailonline.com/seamanship/boat-handling/docking-avoid-the-embarrassment>  
<https://www.sailonline.com/seamanship/boat-handling/mooring-technique>  
<https://www.sailonline.com/seamanship/boat-handling/anchoring-technique-a-hand-signals>  
[www.working-the-sails.com/tides.html](http://www.working-the-sails.com/tides.html)  
[www.working-the-sails.com/yacht\\_emergency\\_drills.html](http://www.working-the-sails.com/yacht_emergency_drills.html)