Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.

**luggage rack**
Support at the rear of the vehicle, for attaching a trunk or for lashing down luggage using straps.

**seat**
Usually leather seat where the driver sits.

**floorboard**
Wide flat surface for resting the feet on.

**mirror**
Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.

**apron**
Aerodynamic component in sheet metal or plastic, trimming the steering column and protecting the driver from the wind and inclement weather.
TRANSPORTATION

Jean-Claude Corbeil
Ariane Archambault

QA INTERNATIONAL
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EDITORIAL POLICY

The Visual Dictionary takes an inventory of the physical environment of a person who is part of today's technological age and who knows and uses a large number of specialized terms in a wide variety of fields.

Designed for the general public, it responds to the needs of anyone seeking the precise, correct terms for a wide range of personal or professional reasons: finding an unknown term, checking the meaning of a word, translation, advertising, teaching material, etc.

The target user has guided the choice of contents for The Visual Dictionary, which aims to bring together in 12 thematic books the technical terms required to express the contemporary world, in the specialized fields that shape our daily experience.

STRUCTURE

Each tome has three sections: the preliminary pages, including the table of contents; the body of the text (i.e. the detailed treatment of the theme); the index.

Information is presented moving from the most abstract to the most concrete: sub-theme, title, subtitle, illustration, terminology.

TERMINOLOGY

Each word in The Visual Dictionary has been carefully selected following examination of high-quality documentation, at the required level of specialization.

There may be cases where different terms are used to name the same item. In such instances, the word most frequently used by the most highly regarded authors has been chosen.

Words are usually referred to in the singular, even if the illustration shows a number of individual examples. The word designates the concept, not the actual illustration.

DEFINITIONS

Within the hierarchical format of The Visual Dictionary's presentation, the definitions fit together like a Russian doll. For example, the information within the definition for the term insect at the top of the page does not have to be repeated for each of the insects illustrated. Instead, the text concentrates on defining the distinguishing characteristics of each insect (the louse is a parasite, the female yellow jacket stings, and so forth).

Since the definition leaves out what is obvious from the illustration, the illustrations and definitions complement one another.

The vast majority of the terms in the Visual Dictionary are defined. Terms are not defined when the illustration makes the meaning absolutely clear, or when the illustration suggests the usual meaning of the word (for example, the numerous handles).

METHODS OF CONSULTATION

Users may gain access to the contents of The Visual Dictionary in a variety of ways:

• From the TABLE OF CONTENTS at the end of the preliminary pages, the user can locate by title the section that is of interest.
• With the INDEX, the user can consult The Visual Dictionary from a word, so as to see what it corresponds to, or to verify accuracy by examining the illustration that depicts it.
• The most original aspect of The Visual Dictionary is the fact that the illustrations enable the user to find a word even if he or she only has a vague idea of what it is. The dictionary is unique in this feature, as consultation of any other dictionary requires the user first to know the word.
Bailey bridge
Steel bridge, often temporary, whose standardized truss components make it easy to assemble quickly.

ROAD TRANSPORT

Movable bridges
Bridges whose decks move to free up the transportation channel they cross, or that are built temporarily while awaiting a permanent structure.

Swing bridge
Bridge whose deck pivots around a vertical axle.

Tiltable turntable
Tilting mechanical structure on a pier enabling the deck to pivot.

Bridges with movable decks

Swing bridge
Bridge whose deck pivots around a vertical axle.

Tiltable turntable
Tilting mechanical structure on a pier enabling the deck to pivot.

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NETWORK OF THOROUGHFARES PROVIDING FOR THE FLOW OF TRAFFIC.

**Road System**

Network of thoroughfares providing for the flow of traffic.

**Cross Section of a Road**

Road: thoroughfare connecting two geographical points, usually urban centers.

- **Surface Course**
  - Roadway's driving surface; it is smooth, impermeable and provides a good grip for vehicles.

- **Shoulder**
  - Area between the roadway and the ditch, providing the roadway lateral support; it is also a place for emergency stops.

- **Solid Line**
  - Line demarcating the edge of the roadway or, when in the center of the roadway, indicating that passing is prohibited.

- **Base**
  - Series of layers above the embankment reducing stress exerted by the traffic and preventing the bed from deforming.

- **Bed**
  - Composed of the embankment and the earth foundation; the base rests on it.

- **Earth Foundation**
  - Part of the ground that was not excavated during the road's construction.

- **Broken Line**
  - Line demarcating the two lanes of the roadway and showing that passing is permitted.

- **Roadway**
  - Surface upon which vehicles drive.
embankment
Layers of material used to build up or level the route the road is to take.

base course
Top foundation layer, made up of fine compacted material; the driving surface lies on it.

subbase
Base of a roadway, made up of coarse compacted gravel, making the roadway solid and stable.

bank
Natural land along the edge of the road.

slope
Steeply sloped ground between the ditch and the bank and between the ditch and the shoulder.

subgrade
Layer supporting the base course and the subbase and providing drainage.

ditch
Ditch parallel to the roadway; surface water drains into it.
**Road Transport**

- **cloverleaf**
  Interchange with four branches where the inside loops are for turning left and the direct links for turning right.

- **acceleration lane**
  Temporary lane where vehicles entering the freeway gain speed in order to safely merge into the traffic lane.

- **traffic lanes**
  Parts of the roadway demarcated by lines, each accommodating a single line of vehicles.

- **freeway**
  Large thoroughfare with separate one-way lanes and no crossing streets; reserved for high-speed traffic.

- **loop**
  Wide circular curve for moving from one highway to another in order to change direction.

- **broken line**
  Line demarcating the two lanes of the roadway and showing that passing is permitted.

- **ramp**
  Connecting lane between two highways or between a road and a highway for changing direction.

- **traffic lane**
  Part of the roadway demarcated by lines, each accommodating a single line of vehicles.

- **passing lane**
  Far left traffic lane where faster-moving vehicles pass other traffic.

- **deceleration lane**
  Temporary lane where vehicles slow down after leaving the traffic lanes.

- **slower traffic**
  Far right traffic lane for slower-moving vehicles.
overpass
Raised part of a road or highway on which traffic flows over another highway or obstacle.

side lane
Temporary lane for vehicles intending to enter or exit the main lanes.

median
Strip of land separating two roadways leading in opposite directions.

exit
Start of the ramp for vehicles leaving the freeway.

entrance
Start of the acceleration lane, parallel to the traffic lanes.

transfer ramp
End of the ramp where it meets the highway entrance.

highway
Communications route connecting two distant geographic points, usually urban centers.

island
Groomed land between the various lanes of an interchange.
**examples of interchanges**

Interchange: structure linking roads or freeways so they do not intersect.

- **cloverleaf**
  Interchange with four branches where the inside loops are for turning left and the direct links for turning right.

- **diamond interchange**
  Interchange connecting a road and a freeway, requiring traffic lights for left turns onto and off the road or overpass.

- **traffic circle**
  Interchange composed of four ramps joining each other to form a circular one-way thoroughfare.

- **trumpet interchange**
  Interchange connecting a road ending at a freeway, using only one loop.
## ROAD TRANSPORT

**fixed bridges**

Structures enabling traffic to clear an obstacle, such as a river, gorge or highway.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>cantilever span</td>
<td>Span with a complex framework on each side of a central pillar; one end of the span rests on the ground and the other supports a suspended span.</td>
</tr>
<tr>
<td>cantilever bridge</td>
<td>Bridge whose two main spans extend toward each other and support a short suspended span, which bears less load.</td>
</tr>
<tr>
<td>beam bridge</td>
<td>Bridge whose deck is composed of one or several beams, which are supported by piers across the open space.</td>
</tr>
<tr>
<td>suspended span</td>
<td>Short center span resting on the ends of the two cantilever spans.</td>
</tr>
<tr>
<td>underpass</td>
<td>Lowered part of a thoroughfare, enabling traffic to flow under another roadway or obstacle.</td>
</tr>
<tr>
<td>deck</td>
<td>Set of components making up the structure that carries the bridge’s traffic lanes.</td>
</tr>
<tr>
<td>abutment</td>
<td>A pier’s point of support on firm ground.</td>
</tr>
<tr>
<td>continuous beam</td>
<td>Extended load-bearing part supported by abutments and piers.</td>
</tr>
<tr>
<td>parapet</td>
<td>Chest-high barrier on each side of the deck, preventing people and vehicles from falling off.</td>
</tr>
<tr>
<td>pier</td>
<td>Sturdy load-bearing component placed at intervals to support the bridge’s beams.</td>
</tr>
<tr>
<td>overpass</td>
<td>Raised part of a road or highway on which traffic flows over another highway or obstacle.</td>
</tr>
</tbody>
</table>
fixed bridges

**arch bridge**
Bridge whose deck is supported by suspenders attached to an arch, which exerts diagonal thrust against the lateral supports.

---

**trussed arch**
Arched girder consisting of two chords joined by a triangulated network of struts.

**upper chord**
Upper lengthwise steel girder forming the metal arch.

**column**
Sturdy component forming a vertical support.

**portal frame**
Part of the deck's frame over firm ground, lying on columns.

**arch**
Metal bow-shaped structure supporting the deck, whose load it transfers to the abutments.

**pier**
Solid concrete construction acting as counterweight to the thrust of the arch against the abutment.

**thrust**
Point at which the arch is supported by the abutment.

**lower chord**
Lower lengthwise steel girder forming the metal arch.

**deck**
Set of components making up the structure that carries the bridge's traffic lanes.

**abutment**
Base of the pier; it supports the arch's weight and thrust.
suspension bridge
Bridge whose long deck is suspended from load-bearing cables, which are supported by the towers and anchored in the ground at both ends of the bridge.

designation

- deck: Set of components making up the structure that carries the bridge's traffic lanes.
- suspension cable: Very strong, flexible component made of steel wires; it bears the weight of the deck.
- suspender: Cable or metal rod connecting the suspension cable to the deck, supporting it.
- approach ramp: Lane for accessing the bridge.
- tower: Elevated structure made of metal or reinforced concrete; it supports the cables.
- center span: Section of the deck entirely suspended between the towers.
- side span: Section of the span between the tower and the abutment.
- foundation of tower: Solid concrete base that is anchored in the ground.
- anchorage block: Concrete structure on each side of the abutment; it is buried deep in the ground and the end of the suspension cable is attached to it.
- abutment: Solid concrete construction whose mass counterbalances the weight of the suspended roadway.
movable bridges

Bridges whose decks move to free up the transportation channel they cross, or that are built temporarily while awaiting a permanent structure.

**swing bridge**
Bridge whose deck pivots around a vertical axle.

**float bridge**
Bridge whose deck rests on pontoons that can be taken apart to open the bridge.

**manrope**
Chest-high barrier on each side of the deck, preventing people and vehicles from falling off.

**pontoon**
Floating caisson filled with air and supporting the deck.

**trolley**
Part of the bridge moved by a motor; it glides along rails installed under the deck.

**transporter bridge**
Bridge with a very high deck from which a moving platform is suspended to transport pedestrians and vehicles.
**double-leaf bascule bridge**
Bridge whose deck is composed of two spans joining each other at the middle of the bridge and pivoting around a vertical axle at each abutment.

**single-leaf bascule bridge**
Bridge whose deck is raised by means of a counterweight mechanism.

**counterweight**
Concrete or cast-iron mass, balancing the weight of the deck and facilitating its movement.

**guiding tower**
Pylon equipped with pulleys and cables for hoisting the deck.

**lift bridge**
Bridge whose deck is raised by a system of cables.

**lift span**
Deck suspended at each end by cables hoisting it up along the guiding towers.
road tunnel
Underground passage for a road under an obstacle, such as a river or a hill.

- **emergency station**: Office housing on-duty personnel responsible for communications and for first aid and fire-fighting equipment.
- **technical room**: Room housing lighting, ventilation, heating and telecommunications equipment.
- **connecting gallery**: Corridor connecting the vehicle rest area to the emergency station.
- **emergency truck**: Vehicle equipped for freeing accident or fire victims and transporting them to hospital.
- **vehicle rest area**: Area reserved for permanent parking of an emergency vehicle or temporary parking for a vehicle that has broken down or has had an accident.
- **fresh air duct**: Conduit usually connected to a central ventilating station, which supplies the tunnel with fresh air through openings at the side of the roadway.
- **exhaust air duct**: Conduit usually connected to a central ventilating station, which evacuates polluted or smoky air through openings along the tunnel.
**Road Tunnel**

- **Shelter**: Enclosed room, ventilated, insulated from fire and connected to the evacuation route, ensuring the users' safety before evacuation.

- **Pressurized Refuge**: Enclosed corridor with two doors; one cannot be opened unless the other one is closed, thus the air pressure prevents the smoke from entering.

- **Stairs**: Recess for an emergency telephone and fire extinguishers.

- **Evacuation Route**: Fresh-air duct connected to a shelter and equipped to evacuate users in case of fire.

- **Roadway**: Surface upon which vehicles drive.
gasoline pump
Machine with a pump for refilling vehicles with fuel.

volume display
Screen displaying, in gallons or liters, the volume of fuel pumped.

price per gallon/liter
Screen displaying the price per volume unit (liter or gallon) of the fuel chosen.

display
Surface displaying instructions for customers paying by card.

total sale display
Screen displaying the total price, corresponding to the volume of fuel pumped.

alphanumeric keyboard
Set of buttons for entering numbers, letters and other kinds of information.

card reader slot
The card is inserted into the device, which verifies the customer’s personal identification number (PIN) before the transaction can begin.

slip presenter
Slot through which the user is given the payment receipt for the card payment.

type of fuel
Choice of available fuels (such as diesel and gasoline) and the price of each per volume unit (liter or gallon).

operating instructions
Set of instructions explaining the steps to follow to use the gasoline pump.

pump nozzle
Gun-shaped spout at the end of the gasoline pump hose and used to pour fuel into the vehicle’s tank.

gasoline pump hose
Flexible pipe connected to the pump, maintaining fuel flow.
gasoline pump  
Machine with a pump for refilling vehicles with fuel.

soft-drink dispenser  
Automated machine serving soft drinks; it is activated by the insertion of coins into a slot.

ice dispenser  
Refrigerated box containing bags of ice for self-service.

mechanics  
Workshop where engines and their related systems are maintained and repaired.

maintenance  
Workshop where the necessary checks and adjustments are made to vehicles.

car wash  
Station where vehicles are automatically washed.

air pump  
Machine connected to a compressor, used for inflating tires to their required air pressure.

gasoline pump island  
Space where the gasoline pumps are installed.

kiosk  
Hut where customers can quickly settle their fuel bills.

office  
Workplace for administrative personnel.

service station  
Commercial establishment comprising one or several gasoline pumps and carrying out general maintenance of vehicles.
automobile

Motor vehicle comprising four wheels, developed for transporting a small number of people and small loads.

**examples of bodies**
Styles vary from manufacturer to manufacturer and from year to year but there is little variation in the basic model.

*micro compact car*
Very small automobile comprising two seats and integrated cargo area, designed to be driven and parked in large cities.

*sports car*
Automobile with an aerodynamic look comprising two doors, a small trunk separate from the passenger compartment and, sometimes, narrow rear seats.

*two-door sedan*
Automobile comprising two doors, a trunk separate from the passenger compartment and four places.

*hatchback*
Automobile comprising two doors and a lift gate, folding front seats granting access to the rear seats, and a cargo area integrated with the passenger compartment.

*convertible*
Automobile comprising two or four doors and a soft or hard retractable roof.

*four-door sedan*
Automobile comprising four doors and a trunk separate from the passenger compartment.
**station wagon**
Automobile comprising four doors, a large cargo area integrated with the passenger compartment and folding rear seats for enlarging the cargo area.

**minivan**
Automobile comprising three rows of seats; the last row can be folded down to enlarge the cargo area.

**sport-utility vehicle**
Automobile designed to be driven on any kind of roadway or on rugged terrain.

**pickup truck**
Automobile comprising only one row of seats and an uncovered bed closed off by a gate.

**limousine**
Spacious deluxe sedan comprising four or more doors; the passenger area is separated from the chauffeur's.
automobile

body
Automobile structure designed to house and protect the mechanical components, the passengers and cargo.

windshield
Glass and plastic pane protecting the occupants from inclement weather while providing good visibility.

windshield wiper
Rubber squeegee, usually mounted in a pair; it is activated by a motor and cleans the windshield.

outside mirror
Mirror fixed to the outside of the passenger compartment enabling the driver to see behind and along the sides of the vehicle without turning around.

cowl
Transverse component of the body between the hood and the windshield allowing air into the passenger compartment.

washer nozzle
Device squirting liquid on the windshield in order to clean it.

hood
Lidlike part of the body covering and protecting the engine.

grille
Plastic or metal grating in front of the vehicle protecting the radiator and serving as decoration.

bumper molding
Metal or plastic trim embellishing the front and rear bumpers.

headlight
Lamp on the front of the vehicle to light up the space in front.

tire
Circular deformable unit made of rubber, mounted on the wheel and inflated with air, providing the connection between the car and the road, and absorbing the unevenness of the road.

fender
Component of the body forming a streamlined and aerodynamic casing around the wheels.

front fascia
Component on the exterior of the body below the bumpers reducing air resistance.
antenna
Device receiving radio waves broadcast by a station.

door
Moving panel with a handle, attached to the body by hinges or a sliding system, providing access to the passenger compartment.

body side molding
Metal or plastic part attached along the doors to protect them against light impact.

sliding sunroof
Moving part in the roof that opens up over the front seats to let air into the passenger compartment.

roof
Exterior component with a slightly curving surface forming the vehicle's covering.

center post
Vertical safety pillar between the two doors connecting the upper part of the body to the lower part.

drip molding
Small open canal capturing rainwater from the roof and carrying it to the rear, where it drips off.

trunk
Enclosed space at the rear of the vehicle, or sometimes at the front, designed to hold and transport cargo that is not too large.

quarter window
Small window among the series of windows on the side of the body.

gas tank door
Flap concealing the fuel-tank opening, which is plugged by a cap.

mud flap
Piece of rubber or plastic attached behind the rear wheels to repel projectiles.

window
Side window that can be lowered, protecting against inclement weather while providing good visibility.

door handle
Device for activating the door's opening mechanism.

door lock
Mechanism housed in the door to lock it; it is manipulated with a key or button.

wheel cover
Decorative metal or plastic part concealing the wheel hub.
**automobile**

**headlights**
Set of regulation luminous devices placed on the front of a vehicle for illuminating and signaling.

- **low beam**
Lamp illuminating the road at short distances (30 yards), used instead of high beam to avoid blinding drivers coming in the opposite direction.

- **high beam**
Lamp illuminating the road over a long distance (100 yards), used outside urban areas.

- **fog light**
Lamp whose light rays are directed toward the roadway and illuminate the road shoulder, by which the driver navigates in the event of fog.

**taillights**
Set of regulation lighting devices placed at the rear of a vehicle and used for signaling.

- **brake light**
Light that goes on automatically when the driver steps on the brake pedal in order to warn the vehicles following it.

- **license plate light**
Lighting device for a vehicle's license plate, making it visible in darkness.

- **taillight**
Lamp turning on automatically when the front lights are lit, making the vehicle visible for up to 150 yards.

- **side marker light**
Colored light demarcating the width of the vehicle.

- **reverse light**
White lamp that turns on automatically to warn motorists and pedestrians when the driver puts the car in reverse.
Moving panel with a handle, attached to the body by hinges or a sliding system, providing access to the passenger compartment.

**outside mirror control**
Lever for adjusting the position of the outside mirror from the inside.

**window regulator handle**
Handily placed lever that turns to activate the mechanism raising and lowering the window.

**assist grip**
Handle allowing the passenger to pull the door inward in order to close it.

**window**
Side window that can be lowered; it protects against inclement weather while ensuring good visibility.

**interior door lock button**
Visible end of the rod activating the lock; it is lifted or lowered to unlock and lock the door.

**lock**
Mechanism housed in the door to lock it; it is manipulated with a key or button.

**trim panel**
Component covered with fabric, plastic or leather, upholstering the inside of the door.

**inner door shell**
The door’s metal structure, serving to absorb impacts; it also encloses the locking mechanisms and, when it is lowered, the window.

**accessory pocket**
Open compartment fitted into the bottom of the door, for storing small objects.

**armrest**
Support fixed to the door, for resting the arm.

**hinge**
Articulating mechanism supporting the door and enabling it to pivot while it is being opened and closed.

**interior door handle**
Mechanism for opening the door from the inside of the vehicle.
**bucket seat: front view**
Bucket seat: upholstered and adjustable seat that envelopes the occupant's body, keeping it in place during turns and providing greater comfort.

**bucket seat: side view**

- **headrest**
  Safety pad placed behind the passenger's head to protect the cervical vertebrae in the event of impact.

- **backrest**
  Part of the seat supporting the back.

- **shoulder belt**
  Strap crossing in front of the passenger's thorax, from the shoulder to the hip.

- **sliding rail**
  Metal part along which the seat moves forward and backward.

- **sliding lever**
  Handle for moving the seat toward or away from the dashboard, in relation to the passenger's height.

- **seat belt**
  Safety device fitted with sliding straps, keeping the passenger in the seat in the event of an accident.

- **seat**
  Horizontal unit for a passenger to sit on.

- **adjustment knob**
  The seat's regulating mechanism, for changing the angle of the backrest to an almost horizontal position.
rear seat
Bench containing several spaces installed in the rear of the passenger compartment and occupying its full width.

**armrest**
Folding support in the middle of the rear seat, for resting the forearm.

**webbing**
Center belt in the rear seat, strapping in the passenger’s pelvis and restraining only the lower part of the body in the event of impact.

**bench seat**
Horizontal unit for sitting on, providing up to three spaces.

**buckle**
Clasp keeping the seat belt around the passenger and released by pressing with the finger.
**dashboard**
Component in the passenger compartment comprising the instrument panel, the manual controls, storage and other accessories.

**wiper switch**
Electric mechanism for switching on the windshield wipers, controlling their speed and activating the windshield washer fluid.

**cruise control**
Mechanism enabling the driver to maintain a cruising speed for the vehicle.

**ignition switch**
Switch activated by a contact key allowing a current from the battery to flow to the starter.

**headlight/turn signal**
Lever having several positions that control the turn signals and the low and high beams.

**horn**
Device emitting a loud sound that the driver can use to attract the attention of a pedestrian or other user of the road.

**steering wheel**
Circular instrument used by the driver for steering the guide wheels.

**clutch pedal**
Pedal pushed to change gears.

**brake pedal**
Lever that the driver presses with the foot to activate the brake system.

**gas pedal**
Unit controlled by the foot to increase, maintain or decrease the vehicle's speed.
rearview mirror
Mirror mounted on the windshield, positioned by the driver so that the vehicles following behind can be seen in it.

vanity mirror
Small mirror on the inside of the sun visor.

sun visor
Movable panel that the passenger can lower over the upper part of the windshield or of the side window to prevent being blinded by the Sun.

on-board computer
Computer integrated into the vehicle; it provides information about the vehicle's main components and helps the driver with tasks related to driving.

vent
Opening, usually covered by an adjustable grille, allowing warm or cold air into the passenger compartment.

glove compartment
Small storage space fitted with a locking door.

climate control
Mechanism operating the heating or air-conditioning system and controlling its intensity.

audio system
Sound-reproduction device comprising a tuner and a cassette or CD player.

gearshift lever
Control for the gearbox that is manually activated by the driver to change gears.

center console
Component located between the front seats and containing certain accessories and control devices, especially the parking brake and gearshift levers.

parking brake lever
Lever connected to the rear-wheel brakes that the driver activates manually to stop the vehicle, or in case of emergency.
instrument panel
Set of dials and warning lights within the driver’s view that report on the vehicle’s functioning.

- **fuel indicator**: Dial whose needle is connected to a float in the gas tank; it shows the level of fuel still available.
- **temperature indicator**: Dial showing the temperature of the engine’s coolant.
- **oil warning light**: Warning light showing that the engine’s oil level is lower than the minimum required.
- **fuel indicator**: Dial whose needle is connected to a float in the gas tank; it shows the level of fuel still available.
- **alternator warning light**: Warning light showing that the battery needs recharging.
- **low fuel warning light**: Warning light showing that the gas tank is almost empty.
- **turn signal indicator**: Intermittent light, often accompanied by a sound, showing that a turn signal is in use.
- **oil warning light**: Warning light showing that the engine’s oil level is lower than the minimum required.
- **high beam indicator light**: Light showing that the high beams are on.
- **turn signal indicator**: Intermittent light, often accompanied by a sound, showing that a turn signal is in use.
- **seat-belt warning light**: Warning light showing that one or more seat belts are not buckled or are not buckled correctly.
- **tachometer**: Dial showing the engine’s rotation speed in revolutions per minute.
- **odometer**: Mechanism measuring, in kilometers or miles, the total distance traveled by the vehicle since it left the factory.
- **trip odometer**: Mechanism measuring partial distances traveled by the vehicle in kilometers or miles; it can be reset to zero.
- **speedometer**: Dial showing the speed at which the vehicle is moving, in kilometers or miles per hour.
**air bag restraint system**
Automatic safety device containing air bags that, in the event of impact, instantly come between the occupants and the dashboard.

**air bag**
Flexible envelope encased in the dashboard, the steering wheel or the doors, which inflates with pressurized gas when it receives the signal from the safing sensor.

**safing sensor**
Device that receives the signal from the primary sensor and deploys the air bags. It has safeguards against deploying accidentally.

**primary crash sensor**
Device located at the front of the vehicle, which, in the event of collision, transmits the pulse it receives to the safing sensor.

**electrical cable**
Cable connecting the safing sensor, which causes the air bags to deploy.

**windshield wiper**
Rubber squeegee, usually mounted in a pair; it is activated by a motor and cleans the windshield.

**windshield wiper blade**
Metal part supporting the wiper through the actions of two small connecting rods.

**wiper**
Thin rubber blade wiping the water and dust from the windshield.

**wiper arm**
Metal rod with a to-and-fro motion that exerts a uniform pressure on the blade attached to it.

**fluted shaft**
Part driven by an electric motor, whose rotating motion it converts into alternating motion through two connecting rods.

**tension spring**
Spring causing the arm to exert pressure on the blade.

**articulation**
Assembly enabling the blade to pivot on the end of the arm so that it adapts to the curvature of the windshield.
**accessories**
Secondary components of a vehicle, used for its maintenance, safety and such.

**jumper cables**
Cables fitted with alligator clips for connecting an emergency battery to a discharged one.

**roller shade**
Shade with a roller containing a spring that causes the shade cloth to roll up; it is usually placed on a side window.

**floor mat**
Fabric or rubber covering placed under the passengers’ feet in order to protect the floor of the vehicle.

**snow brush with scraper**
Small broom with one end for removing snow from the vehicle and the other for scraping ice off the windows.

**bike carrier**
Support placed on the roof or the rear of the vehicle, on which one or more bicycles can be mounted and transported.

**red clamp**
A red clamp is fitted on the positive terminal of both batteries.

**black clamp**
A black clamp is fitted on the negative terminal of the emergency battery; the other is attached to a metal part of the other car.
**road transport**

**jack**
Mechanism activated by a handle, for raising the vehicle.

**handle**
Lever comprising two right-angle bends, for activating the jack mechanism to raise and lower it.

**hitch ball**
Device for hooking up a trailer or caravan to a vehicle.

**ball mount**
Part attached under the rear of the vehicle, with a hitch ball on one end; the trailer's or caravan's hitch articulates with it.

**four-way lug wrench**
Wrench for tightening and loosening the wheel nuts; it is made up of two crossed rods with each end having a different size.

**child safety seat**
Chair adapted to the size of a child; it is equipped with a safety harness for keeping the child seated and attached to the rear seat by the seat belt.

**sun visor**
Screen placed inside the windshield of a parked vehicle to protect the passenger compartment from the Sun's rays.

**car cover**
Flexible casing for covering and protecting the vehicle from the sun, dust and inclement weather.
brakes

Units slowing down or stopping the rotation of the vehicle’s wheels.

disc brake
Braking mechanism comprising a disc attached to the wheel, whose rotation is slowed down when the brake pads exert friction on it.

brake line
Tube carrying the brake fluid, which becomes pressurized when the driver steps on the brake pedal.

piston
Part put into motion by hydraulic pressure, which pushes the brake pads to squeeze the disc.

caliper
Viselike part comprising a piston, which straddles the brake disc and supports the brake pads.

brake pad
Metal plate that is held by the caliper; it is covered with a heat-resistant material that rubs against the disc to slow down its rotation.

disc
Round plate interlocked with the wheel whose rotation slows down as it is braked by the friction of the brake pads.
**drum brake**

Braking mechanism comprising a drum interlocked with the wheel; the brake shoes rub against the drum to slow down the wheel's rotation.

**wheel cylinder**

Mechanism with a cylinder and two pistons that converts the hydraulic pressure in the master cylinder to mechanical force that is applied to the brake shoes.

**piston**

Part that slides in the cylinder under hydraulic pressure and pushes the brake shoe against the drum.

**anchor pin**

Axle serving as an anchoring point for the brake shoe, enabling it to move when acted upon by the piston.

**brake shoe**

Crescent-shaped part interlocked with an anchor pin; it is fitted with a lining, which moves against the interior surface of the drum to slow its rotation.

**backing plate**

Fixed part serving as a mount for the brake shoes, cylinder and anchor pin.

**return spring**

Spring returning the brake shoe to its initial position once the pressure on the brake pedal has ceased.

**lug**

Part for assembling and interlocking the drum and the wheel.

**drum**

Part interlocked with the wheel so that the wheel slows its rotation when the brake shoes rub against the inside of the drum.

**brake lining**

Band of material attached to the brake shoe; heat resistant, it increases the frictional force on the drum.
brakes

**antilock braking system (ABS)**
Electronic device controlling the hydraulic pressure in the braking circuit, to prevent the wheels from locking.

**brake fluid reservoir**
Reservoir supplying the master cylinder with the fluid that transmits pressure to the brakes after the driver presses the brake pedal.

**brake booster**
Mechanism amplifying the force exerted by the driver on the brake pedal.

**brake pedal**
Lever that the driver presses with the foot to activate the brake system.

**braking circuit**
System of tubes containing a fluid that activates the brakes when they come under pressure from the pedal.

**brake pressure modulator**
Hydraulic unit fitted with electric valves that, depending on the signals received from the electronic control unit, adjusts the pressure in each wheel cylinder.

**brake booster**
Mechanism amplifying the force exerted by the driver on the brake pedal.

**disc brake**
Braking mechanism comprising a disc attached to the wheel, whose rotation is slowed down when the brake pads exert friction on it.

**master cylinder**
Mechanism composed of a cylinder and pistons that converts the mechanical force of the brake pedal into hydraulic pressure that is transmitted to the brakes.

**accumulator**
Device temporarily holding the hydraulic brake fluid while the modulator lowers the pressure.

**brake booster**
Mechanism amplifying the force exerted by the driver on the brake pedal.

**pump and motor assembly**
Pump driven by an electric motor, circulating the brake fluid from the accumulator to the master cylinder.

**wheel speed sensor**
Device sensing the rotation speed of a wheel and transmitting that information to the control unit.

**sensor wiring circuit**
Set of electric wires transmitting the signals from the sensor to the electronic control unit.

**brake fluid reservoir**
Reservoir supplying the master cylinder with the fluid that transmits pressure to the brakes after the driver presses the brake pedal.

**electronic control unit**
Device that, as a result of signals received from the wheel speed sensor, controls the brake pressure modulator to give the optimal hydraulic pressure.

**brake booster**
Mechanism amplifying the force exerted by the driver on the brake pedal.

**braking circuit**
System of tubes containing a fluid that activates the brakes when they come under pressure from the pedal.

**accumulator**
Device temporarily holding the hydraulic brake fluid while the modulator lowers the pressure.
Circular deformable unit made of rubber, mounted on the wheel and inflated with air, providing the connection between the car and the road, and absorbing the unevenness of the road.

**tire**

- **rim**: Metal circle constituting the wheel's circumference and on which the tire is mounted.
- **rim flange**: Edge of the rim providing lateral support to the tire bead so that it adheres solidly to it.
- **technical specifications**: Alphanumeric code molded onto the side of the tire, showing its characteristics.
- **wheel**: Circular unit turning around an axle; it supports the weight of the vehicle and transmits the thrust, steering and braking actions.
- **disk**: A part of the rim that is fixed at its center on the wheel's axle.
- **tread design**: Raised part of the tire tread that improves traction for various usage conditions.
- **rubbing strip**: Round protrusion of the rubber wall, protecting it from side impact and wear.
- **bead**: Part of the tire that encloses a rigid steel wire that keeps the tire on the rim and makes it watertight.
- **rubber wall**: Part of the tire located between the tread and the bead.
**examples of tires**

Depending on the intended conditions and uses, tire construction (e.g., type of rubber, tread design, width) varies widely.

- **performance tire**: Wide tire that withstands particularly high temperatures and offers superior performance in holding the road and handling turns.

- **all-season tire**: Tire designed for driving on roads that are dry, wet or slightly snow-covered.

- **winter tire**: Tire characterized by ridges providing a good grip on snow- and ice-covered roads.

- **touring tire**: Tire designed for driving on dry or wet roads, but not recommended for snow or ice.

- **studded tire**: Tire whose tread is fitted with metal studs, which provide a good grip on icy roads.
**bias-ply tire**
Tire with plies whose cords cross each other and are diagonal to the direction of the tread.

**radial tire**
Tire with plies whose cords are perpendicular to the direction of the tread.

**radial ply**
Layer of fabric fibers covered with rubber; its cord extends from one bead to the other.

**tread**
Sculpted part of a tire coming in contact with the roadway.

**tread design**
Raised part of the tire tread that improves traction for various usage conditions.

**tire**
ROAD TRANSPORT

**rubber wall**
Part of the tire located between the tread and the bead.

**rubbing strip**
Round protrusion of the rubber wall, protecting it from side impact and wear.

**belt**
Layer of steel wires or fabric under the tread, reinforcing it.

**inner lining**
Rubber layer covering the interior surface of the tire, preventing the tire from leaking or bursting when punctured.

**bead wire**
Coil of steel wire reinforcing a tire’s bead.

**steel belted radial tire**
Hybrid tire with addition belts laid on top of the plies of the radial tire; the cords of these belts crisscross each other diagonally.
radiator

Vessel in which the coolant, which circulates around the engine, is cooled by means of flowing air.

- **filler cap**: Cap plugging the radiator’s filling opening and regulating the pressure in the cooling system.
- **cooler**: Mechanism with blades blowing air across the radiator in order to cool the liquid it contains.
- **grille**: Grating on the radiator’s front side, protecting it from impact.
- **electric fan motor**: Device transforming electric energy into mechanical energy to drive another device.
- **lower radiator hose**: Rubber hose connecting the cooling-circuit components to each other.
- **temperature sensor**: Device immersed in the coolant that switches on the fan when the coolant reaches a predetermined temperature.
Electric device whose two electrodes produce the spark necessary to ignite the air/gasoline mixture in the cylinder.

**spark plug**

**spark plug terminal**
Top part of the spark plug that plugs into a cable connected to the distributor cap.

**spline**
Rib that prevents the current from spreading outside the spark plug, thus avoiding short circuits.

**center electrode**
Metal shank through which the electric current passes after being transmitted by the terminal.

**hex nut**
Six-faced nut providing a grip on the spark plug to tighten it.

**insulator**
Porcelain part, resistant to high temperatures, insulating the center electrode to prevent short circuits.

**spark plug body**
Lower part of the spark plug that screws into the cylinder head. The ground electrode is part of the spark plug body, from which the end of the center electrode protrudes.

**spark plug gasket**
Machined part providing the seal between the spark plug body and the cylinder head.

**spark plug gap**
Space between two electrodes, where the spark is created.

**ground electrode**
Metal shank welded to the spark plug body and curving under the center electrode.
Unit storing the electricity produced by the alternator and releasing it to supply the vehicle's electric system.
Car propelled by an electric motor whose energy is provided by a battery.

**electric automobile**

- **traction batteries**: Batteries producing a 120-V current, providing the vehicle’s traction.
- **auxiliary battery**: Battery charged by the traction batteries, producing a 12-V current to supply the electric accessories.
- **charging plug**: Plug for connecting the vehicle to the main current or to a specially fitted terminal, in order to charge the batteries.
- **transmission**: Mechanism relaying the rotational motion of the motor to the wheels.
- **electric motor**: Device transforming electric energy into mechanical energy to drive another device.
- **electric cable**: Cable enabling the batteries to supply the electric motor and recover energy during deceleration and braking.
- **cooling fan**: Device with blades for cooling the electronic control box.
- **heating fuel tank**: Reservoir containing the fuel for the heating system.
- **electronic control box**: Electronic device modifying the energy exchanges between the batteries and the electric motor as a function of the driver’s commands and the traffic conditions.
hybrid automobile

Car powered by an internal combustion engine and an electric motor, reducing gasoline consumption and polluting emissions.
Enigne equipped with a device combining a turbine with a compressor, which increases the amount of air entering the engine to increase its efficiency.

**exhaust valve**
Part that opens to allow the burned gases to escape.

**combustion chamber**
Part of the cylinder in which the pressurized air/fuel mixture is ignited and burned.

**exhaust manifold**
Set of pipes at the exit of the cylinders; it captures the exhaust gases and conducts them to the turbo-compressor.

**intake manifold**
After cooling, the air is again conducted to the combustion chamber, which takes in more air.

**warm-air outlet**
When compressed, the temperature of the air increases greatly, which can make it less effective.

**charge air cooler**
The heat exchanger cools the compressed air before it enters the cylinders.

**driven compressor wheel**
Part integrated with the driving turbine wheel; it spins very quickly as it draws in air and compresses it.

**driving turbine wheel**
Part converting the energy from the exhaust gases into rotational energy to activate the compressor.

**exhaust gas admission**
The flow of the exhaust gas is conducted directly from the combustion chamber to the turbo-compressor to drive the turbine.

**exhaust pipe**
Tubular conduit conducting the exhaust gases from the turbo-compressor to the muffler.

**piston**
Metal moving part in the cylinder and attached to the connecting rod; it compresses the air/fuel mixture, then receives the thrust from the burned gases.
four-stroke-cycle engine
Combustion engine whose cycle (intake, compression, combustion, exhaust) requires two up-and-down movements of the piston.

intake valve
Part that opens to let the air/fuel mixture into the cylinder.

cylinder
Chamber closed by two valves; in it, the piston moves and the air/fuel mixture is burned.

air/fuel mixture
Mixture prepared in the carburetor, containing an amount of fuel proportional to the amount of air entering.

intake
Phase during which the exhaust valve opens and the piston comes down and draws the air/fuel mixture into the combustion chamber.

compression
Phase during which the piston goes up to compress the air/fuel mixture. At the height of the compression, the spark plug produces a spark.

explosion
Ignition of the air/fuel mixture produces a major energy release that pushes the piston downward.

burned gases
Mixture of gases (carbon monoxide, nitrogen oxide and unburned hydrocarbons) filling the combustion chamber after the explosion.

exhaust valve
Part that opens to allow the burned gases to escape.

piston
Metal moving part in the cylinder and attached to the connecting rod; it compresses the air/fuel mixture, then receives the thrust from the burned gases.

exhaust
Phase during which the exhaust valve opens and the piston moves back up to expel the burned gases.
two-stroke-cycle engine cycle

Two-stroke engine: combustion engine whose cycle (intake, compression, combustion and exhaust) requires one up-and-down movement of the piston.

1. **compression/intake**
   Beginning of the first stroke during which the piston moves up, drawing the air/fuel mixture into the crankcase and compressing the mixture in the cylinder.

2. **intake port**
   Conduit through which the air/fuel mixture enters the crankcase.

3. **exhaust port**
   Conduit through which the burned gases are expelled from the combustion chamber.

4. **transfer port**
   Conduit conducting the air/fuel mixture from the crankcase to the cylinder.

5. **crankcase**
   Sealed enclosure where the air/fuel mixture enters and the piston/connecting rod moves.

6. **combustion**
   End of the first stroke during which a spark ignites the air/fuel mixture.

7. **exhaust/scavaging**
   Second stroke during which the piston is pushed back by the expansion of the burned gases, which are then expelled and replaced by the mixture coming from the crankcase.

**spark plug**
Electric device whose two electrodes produce the spark necessary to ignite the air/fuel mixture in the cylinder.

**road transport**
types of engines
**rotary engine cycle**
Rotary engine: combustion engine in which the combustion chamber is divided by a rotor into three turning parts of unequal volume.

1. **intake manifold**  
   Passages through which the air/fuel mixture enters the cylinder.

2. **exhaust manifold**  
   Pipe through which the burned gases are expelled from the cylinder.

3. **intake**  
   The air/fuel mixture enters the cylinder through the intake manifold; the rotor's motion forces it into the next chamber.

4. **compression**  
   The rotor's rotation reduces the volume in the chamber and compresses the mixture.

   **rotor**  
   Triangular piston turning eccentrically around an axle and transmitting a rotational motion directly to the crankshaft.

5. **power**  
   When the compression level is reached, the spark plugs produce sparks that ignite the air/fuel mixture.

6. **exhaust**  
   In the passage before the exhaust manifold, the burned gases are expelled by the rotor.
Diesel engine cycle

Diesel engine: combustion engine in which the compressed air becomes sufficiently hot to ignite the injected fuel.

1. **Intake**
   - Phase during which the exhaust valve opens and the piston comes down and draws the air/fuel mixture into the combustion chamber.

2. **Compression**
   - Stroke during which the piston rises, compressing the air, which becomes heated under the pressure.

3. **Power**
   - Stroke during which the expansion of the burning gases pushes the piston downward.

4. **Exhaust**
   - Phase during which the piston moves up and forces the burned gases toward the exhaust valve.

**Injection/Combustion**
- Fuel ignites immediately when it is injected into the hot air at very high pressure.
gasoline engine
Engine in which a mixture of air and gasoline is compressed and ignited to produce an explosion whose energy is converted into mechanical energy.

combustion chamber
Part of the cylinder in which the pressurized air/fuel mixture is ignited and burned.

piston ring
Circular ring mounted on the piston providing a seal between it and the cylinder.

piston skirt
Side surface of a piston guiding it along the inside of the cylinder.

connecting rod
Articulated shank powered by the gas explosion; it transmits the thrust from the piston to the crankshaft.

alternator
Current generator driven by the engine, which recharges the battery to supply the electric system.

cooling fan
Mechanism with blades blowing air across the radiator in order to cool the liquid it contains.

pulley
Part attached to a shaft, whose rotational movement it transmits by means of a belt.

crankshaft
Shaft consisting of a series of cranks, which convert the alternate rectilinear motion of the piston/connecting-rod assembly into a continuous circular motion.

fan belt
Rubberized bands mounted on a pulley and linked to the engine, driving the fan and the alternator.

oil drain plug
Plug closing the hole at the bottom of the oil pan through which used oil is evacuated.
fuel injector
Device pulverizing the fuel in the combustion chamber.

intake manifold
Passages through which the air/fuel mixture enters the cylinder.

distributor cap
Unit supplying the electric current necessary for producing sparks that ignite the fuel in the engine.

vacuum diaphragm
Device connected to the distributor cap specifying the precise moment ignition must be produced relative to the engine's rotation speed.

cylinder head cover
Part of the engine covering the cylinder heads, where the fuel is burned.

spark plug
Electric device whose two electrodes produce the spark necessary to ignite the air/fuel mixture in the cylinder.

exhaust valve
Part that opens to allow the burned gases to escape.

exhaust manifold
Set of pipes at the exit of the cylinders, capturing the combustion gases to conduct them to the exhaust pipe.

flywheel
Disk connected to the crankshaft, which uses the kinetic energy produced at combustion to regulate the crankshaft rotation during the rest of the cycle.

engine block
Main engine casing, which encloses the cylinders.

oil pan
Container closing the bottom of the engine block; it is the reservoir for the oil that lubricates the engine's moving parts.

air conditioner compressor
Component of the air-conditioning system circulating coolant, which cools the air in the passenger compartment when it is hot outside.

piston
Metal moving part in the cylinder and attached to the connecting rod; it compresses the air/fuel mixture, then receives the thrust from the burned gases.
**caravan**

Motorized or towed vehicle fitted out as a dwelling.

**trailer**
Caravan fitted out as a dwelling, usually pulled by an automobile.

**roof vent**
Opening in the roof, fitted with a cover, for letting in fresh air when parked.

**side vent**
Grille on the side of the body, for letting in fresh air.

**awning channel**
Track where the edge of an awning is inserted so it can be spread out in front of the caravan.

**grab handle**
Vertical handle, placed at shoulder height near the door, that one holds to step up into the caravan.

**storage compartment**
Compartment for storing bulky objects, usually accessible from the inside and the outside of the caravan.

**outlet**
Device connected to the main current by an electric cord, which transmits the electric current to the appliances in the caravan.

**door**
Opening comprising a leaf pivoting on hinge pins, for entering and exiting the caravan.

**retractable step**
Folding apparatus attached to the door sill, for stepping up into or down from the caravan.
**body**
Rigid metal frame comprising the body of the caravan.

**sun visor**
Device protecting against the Sun's direct rays.

**tow bar**
Metal piece attached to the caravan's chassis; it comprises a towing hitch and enables the caravan to be connected to the towing vehicle.

**tow safety chain**
Part of an antitheft device attached to the towing hitch, which stops anyone from hitching or unhitching the caravan.

**hydraulic jack**
Mechanism composed of a cylinder and a piston and activated by hydraulic pressure; it allows the landing gear to be deployed by turning a crank.

**towing hitch**
Device placed at the end of the tow bar, securing the camper to the hitch ball of the vehicle towing it.

**landing gear**
The towing hitch's telescopic support, which props up the caravan when it is parked.

**lighting cable**
Electric wire for connecting the caravan's lighting and signaling system to that of the vehicle towing it.

**propane gas cylinder**
Tank containing a gas reserve for supplying the caravan's stove and heating system.
**tent trailer**
Caravan with a collapsible section that is opened up when at rest and folded up again before moving, to lessen wind resistance.

- **roof**: Rigid part enclosing the top of the body and protecting the sections when they are folded up.
- **canopy**: Canvas awning supported by a framework; it protects an outdoor space from the rain and sun.
- **window**: Flexible canvas opening, letting in air and light, supported by a framework when it is opened out.
- **body**: Rigid metal frame comprising the body of the caravan.
- **bunk**: Area for sleeping, supported by a frame when opened out.
- **stabilizer jack**: Retractable support placed under the caravan to keep it steady when parked.
- **spare tire**: Supplementary wheel for replacing a wheel whose tire is punctured.
- **screen door**: Door fitted with a wire cloth that lets air and light pass through while protecting against mosquitoes.

**motor home**
Van whose passenger compartment is fitted out as a dwelling.

- **luggage rack**: Support mounted on the roof; baggage is stowed on it using straps.
- **air conditioner**: Device cooling and ventilating the caravan’s interior air when it is hot outside.
- **ladder**: Device composed of steps and stiles, for accessing the vehicle’s roof.
blind spot mirror
Exterior convex mirror providing a wider field of vision than a conventional mirror.

double-deck bus
Bus equipped with two superimposed compartments, connected by stairs.

route sign
Screen usually on the front, rear and right side of the vehicle, displaying the number of the bus's route.

school bus
Motorized vehicle for transporting schoolchildren and equipped with specialized safety devices.

blinking lights
Flashing red lights at the front and rear of the bus that the driver activates at each stop to signal other vehicles to stop.

crossing arm
Pivoting rod deployed at each stop so that the schoolchildren stay in the driver's field of vision while passing in front of the bus.

crossover mirror
Convex mirror allowing the driver to see the front of the bus.

outside mirror
Mirror fixed to the outside of the passenger compartment enabling the driver to see behind and along the sides of the vehicle without turning around.

blind spot mirror
Exterior convex mirror providing a wider field of vision than a conventional mirror.

upper deck
Upper floor of the bus.

road transport
bus
Motorized vehicle for city or intercity transportation of passengers who are standing or seated.
**city bus**
Motorized vehicle for city transportation of passengers who are standing or seated.

**route sign**
Screen usually on the front, rear and right side of the vehicle, displaying the number of the bus’s route.

**two-leaf door**
Wide door divided into two movable parts, which double back to each side to allow several people to pass through at once.

**engine air intake**
Opening through which outside air enters the vehicle’s engine.

**engine compartment**
Housing for the engine under the vehicle’s chassis, accessible by a door.

**air intake**
Opening in the roof, fitted with a cover, for letting fresh air into the bus.

**entrance door**

**baggage compartment**
Large compartment beneath the vehicle’s floor, fitted with side doors, in which passengers’ baggage is deposited.

**coach**
Motorized vehicle for intercity transportation of seated passengers over medium and long distances.
**minibus**
Motorized vehicle for transporting about 10 passengers, sometimes equipped with a lift for wheelchairs.

**West Coast mirror**
Mirror fixed to the outside of the passenger compartment enabling the driver to see behind and along the sides of the vehicle without turning around.

**blind spot mirror**
Exterior convex mirror providing a wider field of vision than a conventional mirror.

**articulated bus**
Bus with two aligned compartments, connected by an articulated joint.

**articulated joint**
Part connecting the rigid sections by a waterproof bellows and a turning platform shared by the two sections.

**front rigid section**

**rear rigid section**

**platform**
Horizontal part moving up and down for the wheelchair; it rests on the ground in the lower position and forms the doorsill in the upper position.

**wheelchair lift**
Electric lifting device deployed so that a person in a wheelchair can be raised into and lowered from a minibus.

**handrail**
Support rail equipped with a belt restraining the wheelchair when the platform is being raised and lowered.

**lift door**

**entrance door**

**blind spot mirror**

**articulated joint**

**front rigid section**

**rear rigid section**
Trucking

Transportation of cargo by truck.

**Truck Tractor**
Motorized vehicle equipped with a fifth wheel that pulls a semitrailer and supports part of its weight.

**Air Horn**
Device comprising two horns activated by compressed air and emitting a sound signal, most often to avert danger.

**Exhaust Stack**
Vertical upper part of the conduit that evacuates exhaust gas from the engine.

**Marker Light**
Yellow light in front and red in the rear demarcating the dimensions of the vehicle.

**Windshield**
Glass and plastic pane protecting the occupants from inclement weather while providing good visibility.

**Hood**
Lidlike part of the body covering and protecting the engine.

**Radiator Grille**
Plastic or metal grating in front of the vehicle; it protects the vehicle's radiator and serves as decoration.

**Headlight**
Lamp on the front of the vehicle to light up the space in front.

**Fog Light**
Lamp whose light rays are directed toward the roadway and illuminate the road shoulder, by which the driver navigates in the event of fog.

**Fender**
Part of the body covering the wheel.

**Bumper**
Malleable element partially absorbing shocks, thus protecting the body and the engine parts from damage.

**Wheel**
Circular unit turning around an axle; it supports the weight of the vehicle and transmits the thrust, steering and braking actions.
wind deflector
Aerodynamic device mounted on the tractor’s roof to reduce the semitrailer’s wind resistance.

West Coast mirror
Mirror fixed to the outside of the passenger compartment enabling the driver to see behind and along the sides of the vehicle without turning around.

sleeper-cab
Part behind the cab fitted out with a bed or bunk beds and storage space.

grab handle
Vertical handle placed at shoulder height near the door, for gripping while climbing up to or down from the cab.

storage compartment
Compartment for storing bulky objects, usually accessible from the inside and outside of the cab.

fifth wheel
Coupling device enabling the tractor to be connected to the semitrailer and supporting its front portion.

tire
Circular deformable unit made of rubber, mounted on the wheel and inflated with air, providing the connection between the truck tractor and the road, and absorbing the unevenness of the road.

mud flap
Piece of rubber or plastic attached behind the rear wheels to repel projectiles.

step
Tread or set of treads built into the body for climbing up to or down from the cab.

fuel tank
Reservoir containing the diesel fuel that makes the vehicle self-sufficient.

filler cap
Part screwed into the fuel filler neck to close it.
refrigerated semitrailer
Semitrailer equipped with a refrigeration unit and an insulated compartment for transporting perishable goods.

mud flap
Piece of rubber or plastic attached behind the rear wheels to repel projectiles.

truck
refrigerated semitrailer
Semitrailer equipped with a refrigeration unit and an insulated compartment for transporting perishable goods.

frontwall

marker light
Yellow light in front and red in the rear demarcating the dimensions of the vehicle.

vent door
Grille through which the air cools the refrigerant.

partlow chart
Device monitoring the temperature in the semitrailer.

kingpin
Axle of attachment housed in the tractor's fifth wheel; it allows the semitrailer and the tractor to articulate.

battery box
Compartment containing the battery supplying the electric energy required to operate the refrigeration unit.

electrical connection
Electric wire connecting the semitrailer's lighting and signaling system with that of the tractor.

marker light
Yellow light in front and red in the rear demarcating the dimensions of the vehicle.

vent door
Grille through which the air cools the refrigerant.

partlow chart
Device monitoring the temperature in the semitrailer.

kingpin
Axle of attachment housed in the tractor's fifth wheel; it allows the semitrailer and the tractor to articulate.

battery box
Compartment containing the battery supplying the electric energy required to operate the refrigeration unit.

electrical connection
Electric wire connecting the semitrailer's lighting and signaling system with that of the tractor.
flatbed semitrailer
Semitrailer composed of a platform around which detachable side panels can be placed.

**stake pocket**
Support placed on the side edges of the deck, holding in place a belt hook or a post for attaching the side panels.

**bulkhead**
Panel fixed to the front of the deck to prevent cargo from moving forward.

**rub rail**
Bar attached to the stake pockets to protect them from side impact.

**decker**
Floor of the semitrailer serving as the loading plane for the cargo.

**turn signal**
Device emitting an intermittent light, signaling a change of the vehicle's direction or a temporary hazard to other vehicles.

**taillight**
Lamp turning on automatically when the front lights are lit, making the vehicle visible for up to 150 meters.

**marker light**
Yellow light in front and red in the rear demarcating the dimensions of the vehicle.

**landing gear crank**
Bent lever activating the elevating cylinder to deploy the landing gear.

**bumper**
Malleable element partially absorbing shocks, thus protecting the body from damage.

**mud flap**
Piece of rubber or plastic attached behind the rear wheels to repel projectiles.
examples of semitrailers
Semitrailers: trailers whose front portion is equipped with a kingpin for coupling them to a tractor.

tandem tractor trailer
Set of vehicles comprising a tractor, a semitrailer and a trailer.

truck tractor
Motorized vehicle equipped with a fifth wheel that pulls a semitrailer and supports part of its weight.

semitrailer
Trailer whose front part is equipped with a kingpin for coupling it to the tractor.

truck trailer
Motorless vehicle for transporting cargo and connected by a coupling bar to the vehicle towing it.

tank trailer
Semitrailer for transporting bulk products in liquid, powder or gas form.

tank body
Closed tank divided into several compartments of various sizes.

twist lock
Locking mechanism housed in each bottom corner of the container to secure it to the semitrailer.

double drop lowbed semitrailer
Semitrailer for transporting heavy machinery.
**dump semitrailer**
Semitrailer equipped with a dump body for transporting in bulk.

**possum-belly body semitrailer**
Semitrailer designed to transport livestock; it comprises several perforated compartments.

**log semitrailer**
Semitrailer with folding side posts for transporting tree trunks.

**dump body**
Open or closed container; when raised by the elevation cylinder, it discharges its bulk material.

**automobile transport semitrailer**
Semitrailer equipped with several sloped platforms for transporting vehicles.

**van body semitrailer**
Semitrailer comprising a closed box, rigid or made of thick fabric (tarpaulin and sliding curtains).

**refrigerated semitrailer**
Semitrailer equipped with a refrigeration unit and an insulated compartment for transporting perishable goods.

**chip van**
Semitrailer designed to transport wood in chip form.

**truck body semitrailer**
Semitrailer comprising a closed box, rigid or made of thick fabric (tarpaulin and sliding curtains).
tow truck
Truck for towing vehicles that have broken down.

hook
Part that is detached from the towing device while the vehicle's front wheels are placed in position, then reattached to raise it.

cable
Thick sturdy metal beam, which the elevating cylinder raises.

boom
Thick sturdy metal beam, which the elevating cylinder raises.

winch
Mechanism with a steel cable rolled around a spool, for pulling and raising heavy loads, such as a vehicle that has broken down.

towing device
Lifting device where the front wheels of the towed vehicle are placed.

winch controls
Control mechanisms for the electric motor, which powers the spool's rotation.

elevating cylinder
Hydraulic device comprising a telescopic arm, for lifting a heavy load.
**van straight truck**
Truck whose box is rigid and closed.

**dump body**
Open or closed container; when raised by the elevation cylinder it discharges its bulk material.

**dump truck**
Truck equipped with a dump body; it is used for bulk transport.

**cesspit emptier**
Truck equipped with a tank, a pump and a long pipe, for emptying septic tanks and other pipes.
**street sweeper**
Vehicle for cleaning city streets, equipped with a collection body, rotating brushes, a vacuum cleaner and a watering device.

- **collection body**: Container for the trash swept up by the central brush.
- **central brush**: Rotating brush that cleans the width of the roadway.
- **lateral brush**: Rotating brush that cleans the edge of the roadway.
- **watering tube**: Pipe supplying water to the brush as it cleans the roadway.

**detachable body**
Truck for transporting containers, which it loads and unloads using a mechanical arm.

**snowblower**
Vehicle with a mechanism that draws up snow from the road and projects it some distance or into a dump truck.

- **projection device**: Adjustable funnel through which the snow is expelled in a chosen direction.
- **worm**: Mechanism grinding hardened snow before a screw forces it into the projection device.
collection truck
Dump truck for collecting household trash.

truck equipped with a rotating tub, for transporting fresh cement, which it pours out down a chute.

concrete mixer truck

tank truck
Truck for transporting bulk products in liquid, powder or gas form.

tank body
Closed tank divided into several compartments of various sizes.

loading hopper
Large reservoir that takes the trash bags and then feeds them to the packer body.

packer body
Bin equipped with a hydraulic system that compresses household trash.
motorcycle

Two-wheeled motorized vehicle whose engine cylinder is larger than 125 cubic centimeters.

- **windshield**: Glass and plastic pane in front, protecting the motorcyclist from the wind and inclement weather.
- **mirror**: Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.
- **handgrip**: Extension of the handlebars that the driver holds to steer the motorcycle.
- **dashboard**: Body component containing the instrument panel and the light switch.
- **turn signal**: Device emitting an intermittent light, signaling a change of the vehicle's direction or a temporary hazard to other vehicles.
- **headlight**: Lamp on the front of the vehicle to light up the space in front.
- **clutch lever**: Lever for disengaging then engaging the engine and the gearbox, allowing the gears to be changed.
- **front fender**: Piece of curved metal covering the front wheel, protecting the motorcyclist from being splashed.
- **telescopic front fork**: Pair of tubes sliding together and encasing a spring; it controls steering, suspension and shock absorption for the front wheel.
- **engine**: Device converting the combustion of fuel and air into mechanical energy.
- **gas tank**: Reservoir containing the fuel that makes the vehicle self-sufficient.
- **carburetor**: Engine mechanism that prepares the air/fuel mixture.
- **fairing**: Aerodynamic parts covering certain components of the motorcycle to reduce air friction and driver discomfort.
frame
Set of hollow metal tubes welded together, forming the motorcycle's framework.

dual seat
Usually leather seat allowing the driver to sit in front and the passenger to sit behind.

pillion footrest
Metal rods, one on each side of the motorcycle frame, for resting the passenger's feet on.

rear shock absorber
Cylindrical mechanism attached to the rear wheel and coupled with a spring; it absorbs shocks caused by unevenness in the road.

turn signal
Device emitting an intermittent light, signaling a change of the vehicle's direction or a temporary hazard to other vehicles.

taillight
Lamp that lights up automatically when the front lights are lit and emits a brighter light when the driver applies the brakes.

brake caliper
Viselike part comprising a piston, which straddles the brake disc and supports the brake pads.

exhaust pipe
Compartmentalized chamber in which the escaping gases expand, thus reducing the noise from the engine.

rim
Metal circle constituting the wheel's circumference and on which the tire is mounted.

disc brake
Braking mechanism comprising a disc attached to the wheel, whose rotation is slowed down when the brake pads exert friction on it.

front footrest
Metal rods, one on each side of the motorcycle frame, for resting the driver's feet on.

main stand
Fold-down support comprising two rods; it keeps the motorcycle upright with one of its wheels off the ground.

gearshift lever
Pedal located under the motorcyclist's left foot, for changing the ratio between the motor's speed of rotation and that of the wheels.

dual seat
Usually leather seat allowing the driver to sit in front and the passenger to sit behind.

taillight
Lamp that lights up automatically when the front lights are lit and emits a brighter light when the driver applies the brakes.

frame
Set of hollow metal tubes welded together, forming the motorcycle's framework.

front footrest
Metal rods, one on each side of the motorcycle frame, for resting the driver's feet on.

main stand
Fold-down support comprising two rods; it keeps the motorcycle upright with one of its wheels off the ground.

gearshift lever
Pedal located under the motorcyclist's left foot, for changing the ratio between the motor's speed of rotation and that of the wheels.
**motorcycle**

**motorcycle: view from above**

- **headlight**: Lamp on the front of the vehicle to light up the space in front.
- **front brake lever**: Lever connected by a cable to the front brake caliper, activated by the driver to brake the front wheel.
- **turn signal**: Device emitting an intermittent light, signaling a change of the vehicle’s direction or a temporary hazard to other vehicles.
- **emergency switch**: Device for cutting the engine in case of emergency.
- **twist grip throttle**: Acceleration handle that the driver turns to increase or reduce the amount of air/fuel mixture entering the engine and hence its running speed.
- **starter button**: Switch engaging the starter, which engages the engine.
- **clutch housing**: Rigid covering protecting the clutch mechanism.
- **gas tank cap**: Part screwed into the fuel filler neck to close it.
- **horn**: Device emitting a loud sound that the driver can use to attract the attention of a pedestrian or other user of the road.
- **dip switch**: Button for switching between low and high beam.
- **clutch lever**: Lever for disengaging then engaging the engine and the gearbox, allowing the gears to be changed.
- **mirror**: Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.
**rear brake pedal**
Pedal connected by a cable to the rear brake caliper, activated by the driver to brake the rear wheel.

**exhaust pipe**
Compartmentalized chamber in which the escaping gases expand, thus reducing the noise from the engine.

**taillight**
Lamp that lights up automatically when the front lights are lit and emits a brighter light when the driver applies the brakes.

**gear shift**
Pedal located under the motorcyclist's left foot, for changing the ratio between the motor's speed of rotation and that of the wheels.

**pillion footrest**
Metal rods, one on each side of the motorcycle frame, for resting the passenger's feet on.

**front footrest**
Metal rods, one on each side of the motorcycle frame, for resting the driver's feet on.

**turn signal**
Device emitting an intermittent light, signaling a change of the vehicle's direction or a temporary hazard to other vehicles.
**protective helmet**
Rigid headgear covering the head to protect it in the event of accident.

**bubble**
Exterior surface made of durable materials (thermoplastic or composite materials) that absorb shocks.

**visor**
Transparent swing-away part, protecting the eyes while providing good visibility.

**air inlet**
Opening in the bubble allowing air to circulate in the helmet and preventing fog from forming on the visor.

**chin protector**
Part of the bubble protecting the motorcyclist's chin.

**visor hinge**
Articulated fastener for raising and lowering the visor.

**motorcycle dashboard**
Body component containing the instrument panel and the ignition switch.

**speedometer**
Dial showing the speed at which the vehicle is moving, in kilometers or miles per hour.

**oil pressure warning indicator**
Light showing that the oil pressure in the engine's lubrication system is below the minimum necessary.

**neutral indicator**
Light showing that none of the gears is engaged; that is, the engine's rotation is not being transmitted to the wheels.

**ignition switch**
Switch activated by a contact key allowing a current from the battery to flow to the starter.

**turn signal indicator**
Intermittent light, often accompanied by a sound, showing that a turn signal is in use.

**high beam warning indicator**
Light showing that the high beam is lit.

**tachometer**
Dial showing the engine's rotation speed in revolutions per minute.
motorcycle

Examples of motorcycles

**Touring motorcycle**
Motorcycle providing comfort for the driver and the passenger, with features such as wide fairing, extended handgrips and footrests for stretching the legs.

**Off-road motorcycle**
Motorcycle designed for traveling over rough terrain, with features such as a raised engine, extended suspension, elevated muffler and tires with studs.

**Seat**
Usually leather seat where the driver sits.

**Top box**
Usually rigid and waterproof compartment, behind the passenger seat, for stowing light objects.

**Passenger seat**
Usually leather, individual seat with a back; it is higher than the driver seat, for the passenger to sit.

**Saddlebag**
Usually rigid and waterproof luggage, attached to each side of the passenger seat.

**Backrest**
Part supporting the back.

**Driver seat**
Usually leather, individual seat, sometimes equipped with a back, for the driver to sit.

**Telescopic front fork**
Pair of sliding tubes enclosing a spring; it controls steering, suspension and shock absorption on the front wheel.

**Antenna**
Device receiving radio waves broadcast by a station.

**Knobby tread tire**
Tire whose tread is fitted with blocks of rubber, providing better traction on rough terrain.

**Windshield**
Glass and plastic pane in front, protecting the motorcyclist from the wind and inclement weather.

**Examples of motorcycles**

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  Device receiving radio waves broadcast by a station.

- **Windshield**
  Glass and plastic pane in front, protecting the motorcyclist from the wind and inclement weather.

- **Top box**
  Usually rigid and waterproof compartment, behind the passenger seat, for stowing light objects.

- **Seat**
  Usually leather seat where the driver sits.

- **Backrest**
  Part supporting the back.
**motor scooter**
Motorized vehicle with two small wheels, embellished with fairing, characterized by an open frame and a flat floor.

**motorcycle**

**mirror**
Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.

**apron**
Aerodynamic component in sheet metal or plastic, trimming the steering column and protecting the driver from the wind and inclement weather.

**luggage rack**
Support at the rear of the vehicle, for attaching a trunk or for lashing down luggage using straps.

**seat**
Usually leather seat where the driver sits.

**floorboard**
Wide flat surface for resting the feet on.

**moped**
Vehicle designed like a bicycle, but equipped with an engine whose cylinder is no larger than 50 cubic centimeters.

**mirror**

**mirror**
Mirror attached to the handgrip, allowing the motorcyclist to see behind and along the sides of the vehicle without turning around.

**apron**
Aerodynamic component in sheet metal or plastic, trimming the steering column and protecting the driver from the wind and inclement weather.

**luggage rack**
Support at the rear of the vehicle, for attaching a trunk or for lashing down luggage using straps.

**seat**
Usually leather seat where the driver sits.

**floorboard**
Wide flat surface for resting the feet on.

**kickstand**
Fold-down support on the right side of the moped to keep it almost upright when at rest.

**carrier**
Support at the rear of the vehicle, for attaching a trunk or for lashing down luggage using straps.
4 X 4 all-terrain vehicle

Four-wheeled all-terrain vehicle (ATV) for traversing most kinds of terrain, equipped with a motorcycle engine.

- **rear fender**
  Piece of curved metal covering the rear wheel, for protecting the motorcyclist from being splashed.

- **rear cargo rack**
  Support at the rear of the vehicle, for attaching a trunk or for lashing down luggage using straps.

- **gas tank**
  Reservoir containing the fuel that makes the vehicle self-sufficient.

- **handgrip**
  Extension of the handlebars used for steering the ATV.

- **muffler**
  Compartmentalized chamber in which the escaping gases expand, thus reducing the noise from the engine.

- **seat**
  Usually leather seat where the driver sits.

- **bumper**
  Malleable component partly absorbing impact in the event of a front-on collision.

- **front shock absorber**
  Cylindrical mechanism attached to the front wheel and coupled with a spring; it absorbs shocks caused by unevenness in the road.

- **seat**
  Usually leather seat where the driver sits.

- **gearshift lever**
  Pedal located under the driver's foot, for changing the ratio between the motor's speed of rotation and that of the wheels.
**bicycle**

Frame vehicle steered by the front wheel and propelled by the rear wheel, which in turn is driven, via a chain, by a pedal mechanism.

### parts of a bicycle

- **seat**
  - Small triangular seat attached to the bicycle's frame.

- **seat tube**
  - Part of the frame leaning slightly to the rear, receiving the seat post and joining the pedal mechanism.

- **crossbar**
  - Horizontal part of the frame, connecting the head tube with the seat tube and stabilizing the frame.

- **seat stay**
  - Tube connecting the top of the seat tube with the rear-wheel hub.

- **seat post**
  - Component supporting and attaching the seat, inserted to variable depth into the seat tube to adjust the seat's height.

- **carrier**
  - Device attached to the back of the bicycle for carrying bags on each side and packages on top.

- **rear brake**
  - Mechanism activated by a brake cable, comprising a caliper and return springs; it forces a pair of brake pads against the sidewalls to stop the bicycle.

- **rear light**
  - Lamp signaling the bicycle's presence in the dark.

- **fender**
  - Piece of curved metal covering part of the wheel to protect the cyclist from being splashed.

- **generator**
  - Mechanism activated by the rear wheel, converting the wheel's motion into electric energy to power the front and rear lights.

- **reflector**
  - Device returning light toward its source so that other users of the road might see the cyclist.

- **chain stay**
  - Tube connecting the pedal mechanism to the rear-wheel hub.

- **pedal**
  - Part attached to a crank that the cyclist rotates to provide the bicycle's power.
head tube
Tube using ball bearings to transmit the steering movement to the fork.

stem
Part whose height is adjustable; it is inserted into the head tube and supports the handlebars.

handlebars
Device made up of two handles connected by a tube, for steering the bicycle.

brake cable
Sheathed steel cable transmitting the pressure exerted on the brake lever to the brake.

brake lever
Lever attached to the handlebars for activating the brake caliper via a cable.

front brake
Mechanism activated by a brake cable, comprising a caliper and return springs; it forces a pair of brake pads against the sidewalls to slow down the front wheel.

headlight
Lamp illuminating the ground a few yards in front of the bicycle.

fork
Two tubes connected to the head tube and attached to each end of the front-wheel hub.

hub
Central part of the wheel from which spokes radiate. Inside the hub are ball bearings enabling it to rotate around its axle.

rim
Metal circle constituting the wheel's circumference and on which the tire is mounted.

spoke
Thin metal spindle connecting the hub to the rim.

tire valve
Small clack valve sealing the inflation opening of the inner tube; it allows air to enter but prevents it from escaping.

down tube
Part of the frame connecting the head tube to the pedal mechanism; it is the longest and thickest tube in the frame and gives it its rigidity.

water bottle clip
Support attached to the down tube or the seat tube for carrying the water bottle.
bicycle

**power train**
Set of parts (axle, chain wheel, cranks and pedals) transmitting the force exerted by the cyclist on the pedals to the rear wheel.

- **chain guide**
  Part of the derailleur moving the chain from one chain wheel to the other.

- **front derailleur**
  Mechanism for changing the front gears by lifting the chain from one chain wheel to another; it allows the cyclist to adapt to road conditions.

- **shifter**
  Lever for changing gears via a cable moving the derailleur.

- **toe clip**
  Metal device attached to the pedals that covers the front of the feet, keeping the feet in the proper position and increasing pedaling power.

- **control cable**
  Wire made of steel strands transmitting the action exerted on the shifter to each derailleur.

- **freewheel**
  Mechanism attached to the rear-wheel hub allowing it to continue turning when the cyclist stops pedaling.

- **chain wheel A**
  Larger wheel with sprockets that, in combination with the rear gear wheels, increases the distance of one rotation of the pedal, and therefore the speed of the bicycle.

- **bottom bracket axle**
  Tube to which the crank is attached at each end so that one end is up when the other is down.

- **chain wheel B**
  Smaller wheel with sprockets that, in combination with the rear gear wheels, decreases the distance of one rotation of the pedal.

- **crank**
  Metal part bent at a right angle, supporting a pedal and providing a rotational movement around the pedal’s axle.

- **chain**
  Set of metal links meshing with the sprockets on the chain wheel and gear wheel to transmit the pedaling motion to the rear wheel.

- **jockey rollers**
  Small wheels guiding the chain and keeping it taut while changing gears.

- **rear derailleur**
  Mechanism for changing the rear gears by lifting the chain from one gear wheel to another; it allows the cyclist to adapt to road conditions.

- **pedal**
  Part attached to a crank that the cyclist rotates to provide the bicycle’s power.
lock
Antitheft system made up of two metal shanks, one inserted into the other and fitted with a lock, for locking the bicycle to a fixed object.

protective helmet
Rigid headgear covering the head to protect it in the event of accident.

bicycle bag
Bag that can be attached to the handlebars or the carrier.

tool kit
Set of tools for simple repairs and adjustments, such as fixing a flat tire, replacing spokes or adjusting brakes.

child carrier
Seat attached to the frame or the carrier, comprising a harness and footrests, for transporting a child.
**bicycle**

**examples of bicycles**

- **Dutch bicycle**
  City bicycle designed for comfort and in such a way that the cyclist sits upright; its features include a built-in chain guard and a drop-down fender.

- **BMX bike**
  Strong small bicycle, for acrobatics and competitions on bumpy tracks.

- **city bicycle**
  Bicycle designed for comfort and safety while taking short trips on city streets.

- **mountain bike**
  Bicycle with large wheels with treads with studs, a strong frame, numerous gears and powerful brakes, for navigating all kinds of terrain.
**bicycle**

**road bicycle**
Bicycle with narrow tires, lightweight frame and handlebars that position the cyclist for optimum aerodynamics, designed for road racing.

**child’s tricycle**
Very stable three-wheeled vehicle with pedals driving either the front wheel or the rear wheels, for the use of young children.

**tandem bicycle**
Bicycle with two places; both cyclists pedal simultaneously but only the person in front steers.

**touring bicycle**
Intermediate bicycle between a road bicycle and a city bicycle, designed for traveling long distances in comfort.
passenger station

Covered building for the public where trains and passengers arrive and depart.

- glassed roof: Large glassed surface forming the walls and roof.
- indicator board: Panel showing the destination and the configuration of the train, such as type and numbering of cars.
- office: Workplace of the employees managing the station.
- passenger train: Set of cars coupled together and pulled along tracks by a locomotive.
- parcels office: Courier-service wicket for sending envelopes and packages to be dispatched by train.
- passenger platform: Area alongside the tracks for passengers to embark and disembark trains.
- booking hall: Large space for passengers and the public at large housing the various services of the station, such as ticket sales, information counter and shops.
- baggage room: Counter where passengers leave their baggage to be taken to the train’s baggage car, if it has one.
passenger station

metal structure
Set of metal components comprising the skeleton of a building and supporting its roof; here, the roof is made of glass.

baggage cart
Four-wheeled handcart available to passengers for transporting baggage inside the station.

platform number
A pair of parallel rails laid end to end and on which trains run.

ticket collector
Person checking that passengers’ tickets correspond to their destinations.

track
A pair of parallel rails laid end to end and on which trains run.

schedules
Grid showing the departure and arrival times of the trains, their number and their destination or point of departure.

destination
Name of the last station where the train stops at the end of its route.

platform edge
Zone along the edge of the platform, usually demarcated by a safety line.

baggage lockers
Metal compartments for keeping luggage temporarily for a small fee.
railroad station
Covered building for the public where trains and passengers arrive and depart.

underground passage
Pedestrian tunnel connecting one side of the tracks with the other.

platform shelter
Roof protecting passengers waiting on the platform from inclement weather.

parking
Area for parking vehicles.

suburban commuter railroad
Railroad connecting an urban center to its suburbs and neighboring cities.

station platform
Area alongside the tracks, for passengers to embark and disembark the train, or for loading and unloading cargo from the cars.

freight car
Vehicle pulled by a locomotive for transporting cargo.

switch tower
Building housing employees and controls for directing train movement in the station.

signal gantry
Support framework spanning several tracks used to display signals, such as tricolor lights and speed-limit panels.

mast
Vertical support for a crosspiece, such as a signal gantry or an electric catenary.
train station

- **main line**: Tracks for trains traveling long distances.
- **level crossing**: Intersection of a railroad and a road, with or without warning lights.
- **semaphore**: Light for relaying information such as the speed of trains and the distance between them.
- **commuter train**: Local train running frequently each day between an urban center and its suburbs or neighboring cities.
- **footbridge**: Elevated walkway for passengers to cross over a set of tracks.
- **bumper**: Buffer placed at the end of a track stopping the train from running off the end of the track.
- **subsidiary track**: Side track not used for railroad traffic but for shunting, marshaling or loading and unloading.
- **diesel shop**: Building for maintaining and refueling diesel locomotives.
- **freight station**: Set of railroad installations and buildings required for transporting cargo.
- **switch**: A pair of movable track rails (switch rails) for guiding the train from one track to another.
- **scissors crossing**: Track enabling a train to change tracks.
High-speed passenger train (between 135 and 190 mph) powered by electricity, with a power car at each end and a limited number of cars in between.

- **passenger car**: Part of the car with rows of numbered seats.
- **baggage compartment**: Space at the entrance of the car for stowing large pieces of luggage.
- **pantograph**: Articulating mechanism on the roof of the power car that collects electricity from an overhead catenary.
- **air compression unit**: System producing compressed air for operating various pneumatic devices, such as the suspension and brakes.
- **suspension truck**: Three-axled truck with brakes and shock absorbers.
- **main transformer**: Device transferring and adapting electrical energy from the catenary to the traction motors.
- **motor unit**: Compartment where the electricity from the transformers is modified and transmitted to the motor trucks.
- **equipment compartment**: Compartments for various electrical equipment.
- coupling guide device: Assembly on the nosepiece of the power car for coupling it with another train.
- catenary: One or more overhead wires supplying electricity to the power car.
- driver's cab: Compartment in the power car containing controls used by the engineer and providing a view of the track ahead.
- power car: Vehicle with an electric motor and braking system for pulling one or more cars.
- headlight: Lamp illuminating the track ahead.
- headlight: Lamp illuminating the sides of the track.
- position light: Lamp signaling the presence of the power car while at rest.
- pilot: Steel bar attached to the frame that pushes aside debris from the track.
- motor truck: Two-axled truck with traction motors propelling the power car.
diesel-electric locomotive

Vehicle with a diesel engine turning a generator that in turn powers the electric traction motors.

- **diesel-electric locomotive**: Vehicle with a diesel engine turning a generator that in turn powers the electric traction motors.
- **ventilator**: Mechanism cooling the traction motors.
- **safety rail**: Guardrail to prevent falls.
- **horn**: Sounding device warning of the train's approach.
- **dynamic brake**: Wheel acting as a generator to turn the traction motor, which slows down the train.
- **battery**: Device providing electricity for starting the engine and for the lights and other electrical devices when the engine is at rest.
- **side footboard**: Ladder attached to the chassis for climbing up to or down from the locomotive.
- **control stand**: Panel containing the locomotive's main controls.
- **driver's cab**: Compartment where the engineer operates the locomotive and has a view of the track ahead.
- **main generator**: Generator driven by the diesel engine, which in turn supplies electricity to the traction motors.
- **fuel tank**: Reservoir containing the diesel fuel that makes the vehicle self-sufficient.
diesel engine
Combustion engine in which the compressed air becomes sufficiently hot to ignite the injected fuel.

air compressor
Device supplying the compressed air that operates various pneumatic equipment, especially the brakes.

ventilating fan
Bladed mechanism blowing air through the radiators to cool the coolant inside them.

radiator
Vessel in which the coolant, which circulates around the engine, is cooled by means of flowing air.

headlight
Lamp illuminating the track.

lubricating system
Device circulating oil throughout the engine to reduce friction between its moving parts.

compressed air reservoir
Storage chamber for the compressed air.

pilot
Steel bar attached to the frame that pushes aside debris from the track.

sandbox
Container for the sand that is strewn on the track in front of the wheels to provide friction.

coupler head
Device on each end of a locomotive or car for attaching it to another locomotive or car.
types of passenger cars

Cars: vehicles with various layouts that are pulled by locomotives, for transporting and providing services to passengers.

coach car
Car with two rows of benches or seats for transporting passengers in the seated position.

luggage rack
Space at the entrance of the car for stowing large pieces of luggage.

adjustable seat
Seat whose back can be changed from a sitting position to a reclining position.

center aisle
Walkway between the two rows of benches or seats, for going from one end of the car to the other.

vestibule
Entrance compartment of the car.
**types of passenger cars**

**sleeping car**
Car with compartments laid out as small bedrooms.

- berth
  Sometimes folding bench located in a compartment, for sleeping.

- toilet
  Compartment equipped with a toilet and a sink.

- sleeping compartment
  Compartment laid out with berths.

- wheelchair
  Place with special fittings designed for wheelchairs.

- linen
  Storage for linens needed for the trip, such as towels and sheets.

**dining car**
Car laid out for serving meals.

- dining section
  Part of the car where passengers can eat or drink.

- steward’s desk
  Table for laying out the dishes used for the various courses and food that is ready to serve.

- storage space
  Place where employees keep materials for providing service during the trip.

- kitchen
  Room where meals are prepared.

- crew’s locker
  Compartment at the entrance where personnel can stow their coats and other personal effects.
**box car**
Car covered with a waterproof casing and having sliding side doors, for transporting cargo that must be protected from the weather and theft.

**hand brake wheel**
Wheel for manually activating the brake.

**end ladder**
Ladder for climbing up and down the car to carry out certain tasks, such as uncoupling the cars and setting the hand brake.

**hand brake gear housing**
Part covering a chain transmitting the wheel's turning movement to the hand brake winding lever.

**hand brake winding lever**
Vertical metal shaft, with one end connected by a chain to the hand brake wheel and the wheel house, for setting the hand brake.

**telescoping uncoupling rod**
Rod ending in a bent handle for uncoupling the cars.

**corner cap**
Metal part reinforcing and protecting the edges of the car.

**horizontal end handhold**
Crossbar for holding onto when moving from one side of the car to the other while coupling.

**sliding channel**
Groove guiding and supporting the door as it slides open and shut.

**sill step**
U-shaped support situated under the car's frame for reaching the ladder.

**side ladder**
Ladder on the side of the car for accessing the end ladder.

**car**
Vehicle pulled by a locomotive for transporting cargo.
**door stop**
Part stopping the door when it is closed.

**placard board**
Placard for a label warning of dangerous material.

**routing cardboard**
Placard for a label listing the car’s contents.

**locking lever**
Bar that locks the door and prevents it from sliding.

**automatic coupler**
Device on each end of a locomotive or car for attaching it to another locomotive or car.

**coupler knuckle**
Articulated component that interlocks with the corresponding part on another car or locomotive.

**coupler knuckle pin**
Part around which the coupler knuckle pivots to open and uncouple.
examples of freight cars
The shape of the cars varies depending on the type of cargo being transported.

flat car
Car with a simple wooden deck for carrying large objects, such as pipes, logs, and heavy machinery.

bulkhead flat car
Flat car with sturdy plates at each end for carrying loose cargo (usually logs).

depressed-center flat car
Car with two extra trucks and a lowered deck for carrying heavy equipment.

intermodal car
Flat car for carrying semitrailers.

hopper car
Car for carrying bulk cargo; it has dump doors on the bottom for unloading the cargo.

gondola car
Open-top car for carrying heavy bulk material, such as scrap metal and construction material.

hopper ore car
Usually open-top hopper car of limited capacity for carrying minerals.

wood chip car
Open-top gondola car with a large compartment for carrying wood chips.

hard top gondola
Gondola with a retractable metal roof for carrying bulk cargo.

tank car
Car with a sealed reservoir for carrying liquids and gases.
**refrigerator car**
Closed-box insulated car with a refrigeration unit for carrying perishable foodstuffs.

**caboose**
Car that is usually at the end of the train; it houses personnel, provisions and tools.

**livestock car**
Car with slatted sides for carrying livestock; it sometimes has two decks.

**box car**
Car covered with a waterproof casing and having sliding side doors, for transporting cargo that must be protected from the weather and theft.

**automobile car**
Multilevel car for carrying vehicles, which are strapped down.

**container car**
Flat car for carrying standard-size shipping boxes.
yard
Set of tracks where freight trains are reconfigured to contain cargo cars with the same destination and then dispatched.
car cleaning yard
Set of tracks where cars are cleansed of any cargo residue before going back into circulation.

water tower
Elevated reservoir containing potable water.

repair shop
Structure for repairing and maintaining locomotives and cars.

receiving yard
Set of tracks where arriving trains park and are unhitched from their locomotives.

locomotive track
Track that leads locomotives to the shop for maintenance.
railroad track
A pair of parallel rails laid end to end and on which trains run.

rail
Steel bar of a set gauge that is attached to ties; the train’s wheels roll along it.

head
Upper horizontal part of the rail on which the wheels roll.

web
Narrow vertical part of the rail to which the fishplates are attached.

base
Lower horizontal part of the rail; it rests on and is attached to the ties.

tie
Piece of wood or concrete that is set in ballast and supports the rails to distribute the train’s load and keep the rails parallel.

ballast
Bed of gravel that serves as the foundation for the tracks and provides drainage.

remote-controlled switch
Device operated from a distance for opening and closing a pair of movable track rails (switch points) to guide a train from one track to another.

switch rod
Metal part located between two ties that maintains the distance between two switch points.

switch point
Movable rail that is machine-tapered at the end and connected to a parallel and similarly machined switch point.

closure rail
Two fixed rails located between a switch point and a frog.

pull rod
Metal part connected to the power switch machine that opens and closes the switch points.

power switch machine
Remote-controlled motor that provides the mechanical force for opening and closing the switch.

point wire
Wire that connects the power switch machine to levers in the switch house.
highway crossing
Intersection of a railroad and a road, with or without warning lights.

crossing gate mechanism
Box housing the mechanism that automatically lowers and raises the gate arm.

gate arm support
Articulating bracket that lowers and raises the gate arm.

crossing gate
Moving barrier that blocks the road to stop vehicles from crossing the tracks.

counterweight
Mass that provides balance to the gate arm to facilitate its movement.

gate arm lamp
Flashing signal light that is activated as the gate arm is lowered.

gate arm
Moving barrier that blocks the road to stop vehicles from crossing the tracks.

visor
Curved sheet of metal that enhances a signal light's visibility by blocking sunlight.

junction box
Box that houses the electric wires used in the operation of the signal lights.

flashing light
Intermittent signal light that is activated automatically as the train approaches.

number of tracks sign
Sign that displays the number of tracks the road crosses.

base
Bottom of the mast that is anchored to the ground.

gate arm support
Articulating bracket that lowers and raises the gate arm.

counterweight
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gate arm support
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base
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RAIL TRANSPORT

subway
Electrified urban railroad built mainly underground for transporting passengers at frequent intervals.

subway station
Structure and facilities that provide passengers access to the subway.

exterior sign
Sign placed outside the entrance to the subway that makes it visible from afar.

station entrance
Small structure built on a public thoroughfare that provides access to the subway station.

tunnel
Underground passageway through which the subway train travels between stations.

escalator
Installation that consists of articulated steps on a continuously turning chain; it allows movement between two levels of a building.

mezzanine
Intermediate level that is accessible by stairs and serves as a landing between the station entrance and the platforms.

entrance turnstile
Automatic device that allows a user to enter after swiping a pass or inserting a ticket or transfer.

exit turnstile
Device that allows one user at a time to exit.

stairs
Structural component that enables movement between levels.

ticket collecting booth
Kiosk protected by glass where an agent sells tickets and passes, and controls who enters and exits.

line map
Chart that shows a train’s route and the stations it serves.

advertising panel
Space rented by a business to place a poster promoting products or services.

subway train
Set of cars that is pulled by a motor car and carries passengers.

track
Course that consists of parallel electrified rails on which trains roll.
transfer dispensing machine
Device that dispenses tickets entitling the user to subsequently board another means of transportation linked with the subway system, such as a bus, streetcar or train.

kiosk
Small store in the halls or the entrance of the station that sells newspapers and refreshments.

footbridge
Bridge that spans the tracks and provides access to both platforms.

directional sign
Sign that indicates the terminus of the train arriving at that platform.

bench
Long narrow unupholstered seat with or without a back, seating several people.

station name
Sign on the platform wall that shows the name of the station so that passengers in the train can see it.

subway map
Map that shows the entire subway system; each subway line is illustrated in a different color.

platform edge
Zone along the edge of the platform, usually demarcated by a safety line.

safety line
Visible or textured line warning passengers of the margin of safety.

platform
Area adjacent to the tracks where passengers board and exit trains; it is at the same level as the floor of the trains.
passenger car
Vehicle that rolls along subway tracks and transports passengers.

ventilator
Grille that circulates fresh air throughout the car.

side door
Sliding door that opens onto the station platforms for passengers to enter and exit.

light
Fixtures for illuminating the interior of the car.

inflated guiding tire
Tire mounted at right angles to the carrying tire; it rolls against the guiding bar to guide the truck.

inflated carrying tire
Nitrogen-filled tire that supports and conveys the car.

suspension
Assembly that dissipates the vibrations occurring as the wheels roll along the tracks.

window
Opening containing thick glass that does not open.
emergency brake
Device that stops the train; it is available to users in case of emergency.

communication set
Loudspeaker phone used for talking to the train driver.

subway map
Map that shows the entire subway system; each subway line is illustrated in a different color.

side handrail
Handle on the wall next to the door for passengers to hold onto while the train is in motion.

handrail
Floor-to-ceiling pole in the middle of the aisle for passengers to hold onto while the train is in motion.

single seat
Seat for one passenger.

double seat
Bench with space for two passengers.

heating grille
Grating through which warm air is forced to heat the car interior.

subway train
Set of cars that is pulled by a motor car and carries passengers.

motor car
Vehicle with an electric motor and braking system for pulling one or more cars.

trailer car
Freewheeling car pulled by a motor car.

motor car
Vehicle with an electric motor and braking system for pulling one or more cars.
The most up-to-date subway trucks ride on tires, which provide fast acceleration and little noise or vibration.

**sliding block**
Shoe taking the current from the guiding and current bar.

**steel safety wheel**
Auxiliary regular train wheel that comes in contact with the running rail in the event the tire deflates and during switching.

**running rail**
Regular railroad rail for the steel safety wheel to roll on in the event the tire deflates; it also receives the traction current from the return shoe.

**inflated carrying tire**
Nitrogen-filled tire that supports and conveys the car.

**inflated guiding tire**
Tire mounted at right angles to the carrying tire; it rolls against the guiding bar to guide the truck.

**guiding and current bar**
Metal bar against which the guiding tire rolls; it also supplies the traction current.

**runway**
Metal or concrete track that is fixed to the invert on which the tires roll.

**invert**
Thick concrete foundation for the tracks.
RAIL TRANSPORT

streetcar
Electrically powered vehicle for transporting people; it rolls on tracks embedded in city streets and on the edge of roadways.

pantograph
Articulating mechanism on the roof of the streetcar that collects electricity from an overhead catenary.

catenary
One or more overhead wires supplying electricity to the streetcar.

route sign
Screen that is usually placed on the front, rear and side of the streetcar to show its route number.

advertising sign
Poster on a space rented by a business that promotes products or services.

motor bogie
Double-axle truck whose steel wheels are driven by an electric motor and roll along tracks.
harbor

Site for refueling and repairing ships, loading and unloading cargo and embarking and disembarking passengers.

**container-loading bridge**
Cantilevered gantry crane along the quay for loading and unloading containers.

**quay**
Structure for docking ships so that passengers can embark and disembark and cargo can be loaded and unloaded.

**gate**
Waterproof device that closes a dock.

**dry dock**
Dock where water is pumped out so that a ship's hull can be repaired, cleaned or painted.

**quayside crane**
Crane that rolls along rails the length of the quay and uses a moving arm to load and unload cargo in forms such as container, bulk and break bulk.

**canal lock**
Structure with a lock-chamber that can be filled with water or emptied to raise or lower a ship from one water level to another.

**silos**
Very large, usually cylindrical, reservoirs for storing products in bulk, especially grain.

**grain terminal**
Area with installations and equipment for storing, sorting and handling grain.

**floating crane**
Quayside crane that is mounted on a floating movable platform and often used for carrying heavy cargo.

**quay ramp**
Slope leading from the quay to the level of the water.

**dock**
Vast enclosure made up of quays where ships dock to take on and unload cargo.

**container ship**
Ship that is designed for transporting cargo in containers in its hold and on its deck.

**transit shed**
Warehouse located near the quay for temporarily storing cargo.

**bulk terminal**
Area with installations and equipment to store, sort and handle bulk items, such as ore and coal.

**quayside crane**
Crane that rolls along rails the length of the quay and uses a moving arm to load and unload cargo in forms such as container, bulk and break bulk.

**container-loading bridge**
Cantilevered gantry crane along the quay for loading and unloading containers.

**dry dock**
Dock where water is pumped out so that a ship's hull can be repaired, cleaned or painted.

**canal lock**
Structure with a lock-chamber that can be filled with water or emptied to raise or lower a ship from one water level to another.

**silos**
Very large, usually cylindrical, reservoirs for storing products in bulk, especially grain.

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Area with installations and equipment for storing, sorting and handling grain.

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Quayside crane that is mounted on a floating movable platform and often used for carrying heavy cargo.

**quay ramp**
Slope leading from the quay to the level of the water.

**dock**
Vast enclosure made up of quays where ships dock to take on and unload cargo.

**container ship**
Ship that is designed for transporting cargo in containers in its hold and on its deck.
lighthouse
Tower with a powerful lamp at the top for guiding ships.

cold shed
Insulated refrigerated structure for storing perishable foodstuffs.

passenger terminal
Structures and facilities where passengers embark and disembark ships.

ferryboat
Shuttle boat for carrying vehicles with their cargo and passengers.

oil terminal
Area with installations and equipment to store petroleum products and load them into tankers.

tanker
Ship with large reservoirs for transporting liquid petroleum products.

office building
Structure where personnel who administer the port work.

customs house
Structure where inspection and legal operations related to imported and exported cargo are carried out.

road transport
Transportation of cargo by truck on public roads.

container terminal
Area with installations and equipment to store, sort and handle containers.

quayside railway
Railroad tracks leading onto a quay for transshipping containers from a ship to a car or vice versa.

parking lot
Area for parking vehicles.

bridge
Structure consisting of a girder and posts that rolls along tracks moving containers.
canal lock

Structure with a lock-chamber that can be filled with water or emptied to raise or lower a ship from one water level to another.

- **lower gate**: Watertight door or pair of doors made of wood or metal that open when the water levels between the lock-chamber and the lower level are the same.
- **line hook**: Piece of wood or metal attached to the side wall for securing the rope that holds a ship in place while it is in the lock-chamber.
- **side wall**: Wall forming one side of the lock-chamber and supporting its doors.
- **lock emptying system**: Conduit that evacuates the water from the downstream side causing the water level in the lock-chamber to go down.
- **lock filling and emptying system**: System consisting of a conduit with sluices alongside the side wall and perpendicular conduits on the canal bed that together raise and lower the water level in the lock.
- **approach wall**: Wall along the side wall that guides ships into the lock.
- **lower level**: Part of the lock at the downstream end of the lock-chamber.
**ladder**
Ladder fixed to the side wall for climbing up out of and down into the lock-chamber.

**canal bed**
Thick concrete base that makes up the lock’s foundation.

**miter gate recess**
Indentation in the side wall into which a gate fits when open.

**lock filling intake**
Conduit with a sluice that opens to raise the water level in the lock-chamber.

**upper gate**
Watertight door or pair of doors made of wood or metal that open when the water levels between the lock-chamber and the upper level are the same.

**lock filling opening**
Holes through which the water flows to fill the lock-chamber.

**lock filling and emptying opening**
Holes through which the water flows in to fill the lock-chamber or out to empty it.

**lock-chamber**
Central part of the lock where the water level is raised and lowered depending on the heading of the ship.

**upper level**
Part of the lock at the upstream end of the lock-chamber.

**upper gate**
Watertight door or pair of doors made of wood or metal that open when the water levels between the lock-chamber and the upper level are the same.

**flow**
Natural current moving down the grade from upstream to downstream.
ancient ships

Over the course of history, navigation has played a key role in discovering new lands and in developing trade between peoples.

**longship**
Sailing ship used by the Vikings during the Middle Ages; it had square sails, oars and a prow and stern that were usually sculpted.

**galley**
Warship with a sail and oars that was used in ancient times; it disappeared in the 18th century.

**trireme**
Warship used by the Romans with a ram, a sail and three vertical rows of oars.
funnel
Tall pipe atop the engine that evacuates the steam and the combustion smoke.

caravel
Fast ship with three or four masts; it was used especially in the 15th and 16th centuries for exploration.

galleon
Large warship with sails that was used by the Spanish in the 17th and 18th centuries for trading with the colonies.

side-wheeler
Ship used in the 19th century that was propelled by steam, which turned two paddle wheels.

paddle wheel
Wheel with blades that propels the boat; it is driven by a steam engine.
Boats characteristic of various parts of the world for a number of generations; they are used as a means of transportation, for fishing, commerce and exploration.

**outrigger canoe**
Dugout canoe that is stabilized by one or two outriggers.

**gondola**
Venetian boat characterized by raised curved ends and steered by an oar.

**dugout canoe**
Light boat used in Africa and Oceania that is made from one piece of wood and is propelled by a paddle or a sail.
**传统船只**

**传统风帆**

- **风帆**
  - 长倾斜的杆，由桅杆支撑，并用三角形帆固定。

- **舵**
  - 水中转动的组件，由垂直轴支撑，用于控制船只。

- **桅杆**
  - 有时略微倾斜的高杆，支撑着三角帆。

- **弗勒卡**
  - 古代地中海的船只，可以由帆或桨推进，至今仍可在尼罗河上发现。

- **米津船**
  - 远东用于捕鱼和运输货物的船，帆由条状物或帆布制成，并由杆子支撑。

- **横杆**
  - 嵌入帆的横杆口袋中的 rigid 杆，以保持其形状。

**MARITIME TRANSPORT**

**felucca**

A Mediterranean boat of ancient times that was propelled by a sail or an oar; it is still found today on the Nile.

**mast**

Tall pole that is sometimes slightly inclined; it supports the lateen yard.

**lateen yard**

Long inclined pole that is supported by the mast and rigged with a triangular sail.

**rudder**

Submerged component that pivots on a vertical axle and is used to steer the boat.

**junk**

Boat used in the Far East for fishing and transporting cargo; its sails are made of matting or canvas and are stretched by battens.

**mizzenmast**

Mast on the stern of the boat.

**mainmast**

Principal mast that is fixed approximately in the center of the boat.

**foremast**

Mast nearest the prow of the boat.

**batten**

Rigid pole inserted into the sail's batten pockets to maintain its shape.
Masting and rigging

Masting: masts, yards, ropes and other movable sailing equipment that support and manipulate the rigging.

mizzenmast
One of the principal masts of the ship; it is located aft of the mainmast between the ship's center of gravity and its rudder.

mainmast
One of the principal parts of the ship; it is located closest to the center of gravity.

foremast
Mast nearest the prow of the boat.

jiggermast
Mast located aft on the four-masted bark.

gaff
Diagonal yard aft of a mast and supporting the top part of a gaff sail.

gaff sail boom
Horizontal yard articulating on a mast; it keeps the bottom edge of a sail taut.

shroud
Heavy taut rope between a mast and the side of the ship; it secures and supports the mast on the sides.

backstay
Long taut rope between the mast and the deck; it secures and supports the mast athwartships and aft.

side
Longitudinal surface of the ship.

four-masted bark
Sailboat with four masts and square sails except for the jiggermast, which carries a gaff sail.
footrope
Rope hanging along the entire length of a yard that is used by sailors to trim the sails.

pole
Tapered top end of a mast.

yard
Long pole that is supported by the mast and holds up the edge of a sail.

fore-royal mast
Mast above the fore-topgallant mast that carries a royal sail.

fore-topgallant mast
Mast above the fore-topmast that carries a topgallant sail.

masthead
Topmost section of a mast that is sometimes doubled with the lower section of the mast supporting it; the stays and shrouds are attached to it.

fore-topmast
Mast that is immediately above a lower mast and carries a topsail.

top
Platform at the top of the lower mast from which the upper rigging can be manipulated.

lower mast
Bottom section of a mast that is solid and thick so it can support the upper sections.

stay
Taut rope between a mast and another point on the masting; it secures and supports the mast fore of it.

bobstay
Rope counterbalancing the tension caused by the stays and the staysail-stays on the bowsprit.

bowsprit
Mast extending before the stem; additional jibs can be attached to it.

lifeboat
Boat for transporting passengers and crew in the event of shipwreck.

davit
Skid hanging over the edge of the ship that supports a boat and is used to lower and raise it.
four-masted bark

sails
A sailboat's sails that are rigged on the bowsprit, the foremast, the main masts, the jigger mast and between these masts.

mizzen royal staysail
Triangular sail rigged on the stay supporting the aft fore-royal mast.

mizzen topgallant staysail
Triangular sail on the stay supporting the aft fore-topgallant mast.

mizzen royal brace
Rope that causes the yard supporting the royal sail to pivot around the mizzenmast.

mizzen topmast staysail
Triangular sail on the stay supporting the aft fore-topmast.

jigger topgallant staysail
Highest triangular sail among the sails rigged between the mizzen mast and the jigger mast.

jigger topmast staysail
Triangular sail below the jigger topgallant staysail.

gaff topsail
Sail above a gaff sail and between the gaff and the top of the mast.

jigger topmast staysail
Triangular sail below the jigger topgallant staysail.

spanker
Gaff sail for the mizzen mast.

halyard
Rope for hoisting a sail or a yard.

sheet
Rope extending from the lower corner of a sail for trimming it with respect to the wind direction.

mizzen sail
The lowest square sail supported by the mizzen mast.

mizzen topmast staysail
Triangular sail on the stay supporting the aft fore-topmast.
main royal sail
Small square sail above the topgallant sail at the top of the mainmast.

main upper topgallant sail
Square sail under the main royal sail.

main lower topgallant sail
Square sail between the main upper topgallant sail and the main upper topsail.

fore royal sail
Small square sail at the top of the foremast above the fore topgallant sail.

main upper topsail
Square sail between the main lower topgallant sail and the main lower topsail.

upper fore topgallant sail
Square sail below the fore royal sail.

upper fore topsail
Square sail between the lower fore topgallant sail and the lower fore topsail.

flying jib
Very light triangular staysail that is foremost on the bowsprit.

outer jib
Triangular staysail that lies between the flying jib and the middle jib.

middle jib
Triangular staysail that lies between the outer jib and the inner jib.

inner jib
Very heavy triangular staysail that lies farthest aft on the bowsprit.

main sail
Lowest square sail on the mainmast.

foresail
Lowest square sail on the foremast.

lower fore topsail
Square sail above the foresail.

four-masted bark
MARITIME TRANSPORT
examples of boats and ships

Boats and ships: floating structures for underwater exploration and transporting passengers and cargo across water.

**trawler**
Fishing boat that tows a large funnel-shaped net (trawl).

**drill ship**
Ship for drilling for oil in deep water (1,000 m and more); it is more mobile but less stable than a drilling rig.

**bulk carrier**
Ship for transporting raw dry materials, such as grain, coal and ore.

**derrick**
Metal structure erected over an oil well; tools for drilling through rock are raised and lowered through it.
**Examples of boats and ships**

- **tug**
  - Boat propelled by powerful engines that is used to tow boats and other floating craft to help them maneuver or to rescue them.

- **wheelhouse**
  - Cabin that houses the pilot and the navigation instruments.

- **rudder blade**
  - Part of the rudder that receives the thrust from the propeller in order to steer the boat.

- **propeller**
  - Device with blades integrated onto a shaft that is driven by the engine to provide thrust and thus impel the ship.

- **ice breaker**
  - Boat that opens up a navigable passage through ice.

- **stem**
  - Reinforced part of the boat's prow that crushes the ice with its weight and then pushes it aside to open a channel.

- **stem propeller**
  - Screw that pulls up water from under the ice sheet to weaken its support thus making it easier to break and move.

- **rear propeller**
  - Screw driven by a powerful engine to propel the ice breaker.
**examples of boats and ships**

**container ship**
Ship that is designed for transporting cargo in containers in its hold and on its deck.

**stack**
Tall pipe atop the engine that evacuates the steam and the combustion smoke.

**chart room**
Office in which charts and other navigation documents are kept.

**radar**
Detection device that emits radio waves and receives their echo; it is used to avoid collisions and to navigate when visibility is reduced.

**radio antenna**
Metal conductor that emits and receives radio waves for communications.

**compass bridge**
Covered glassed-in platform from which officers and crew navigate the vessel.

**lifeboat**
Boat used for evacuating people from the ship in case of emergency.

**crew quarters**
Compartments for housing crew members.

**propeller**
Device with blades integrated onto a shaft that is driven by the engine to provide thrust and thus impel the ship.

**rudder**
Submerged component that pivots on a vertical axle and is used to steer the boat.
container
Metal box of standardized dimensions for transporting cargo.

container hold
Large compartment under the deck where containers are stowed.

masthead light
Lamp projecting a strong light several miles ahead and to the sides of the ship.

forecastle
Section of the forward deck for storing equipment such as chains and anchors.

anchor-windlass room
Opening made in a ship's bulwark or deck for the anchor chains and lashings.

stem bulb
Bulge in the bottom part of the stem that reduces the hull's water resistance.

waterline
Line separating the submerged and above-water parts of the hull of a ship under normal load conditions.
hovercraft
Propeller vehicle that moves above water (or land) by gliding on a cushion of air it creates by blowing downward.

rudder
Pivoting part behind the propeller blast for steering the hovercraft.

propeller duct
Metal part that surrounds the propeller and increases its power by concentrating its air intake.

dynamics propeller
Device that is made up of blades integrated with a shaft; it pushes air behind the hovercraft thus causing a forward movement.

navigation light
Lamp that is visible from afar to signal the hovercraft’s presence.

passenger cabin
Compartment where the passengers sit during the trip.

blade lift fan
Device blowing air downward under the hovercraft to keep it levitated.

skirt finger
Flexible and pliable extension to the skirt that adapts to the surface of the water.

flexible skirt
Rubber flexible side that surrounds the edge of the hull to trap the air blown down by the lift fan; this increases pressure, which in turn causes lift.

diesel propulsion engine
Power source using the combustion of an air/fuel mixture to drive the propellers.

baggage racks
Compartment for storing luggage.
**ferry boat**
Shuttle boat for carrying vehicles with their cargo and passengers.

- **telecommunication antenna**
  Multipurpose antenna that receives and transmits various signals such as video, telephone and digital.

- **radio antenna**
  Metal conductor that emits and receives radio waves for communications.

- **heating/air-conditioning equipment**
  Machinery that regulates the cabin’s temperature and humidity.

- **radar**
  Detection device that emits radio waves and receives their echo; it is used to avoid collisions and to navigate when visibility is reduced.

- **car deck**
  Compartment where the vehicles are parked in such a way as to keep the ferry balanced.

- **passenger cabin**
  Compartment where the passengers sit during the trip.

- **folding ramp**
  Retractable door that lowers onto the quay to load and unload vehicles.

- **ferry boat**
  Shuttle boat for carrying vehicles with their cargo and passengers.

- **telecommunication antenna**
  Multipurpose antenna that receives and transmits various signals such as video, telephone and digital.

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  Machinery that regulates the cabin’s temperature and humidity.

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- **folding ramp**
  Retractable door that lowers onto the quay to load and unload vehicles.
**runabout**
Pleasure boat with an outboard engine for cruising and waterskiing on inland waterways.

- **windshield**
  Front sheet of glass and plastic protecting the pilot from the wind and splashing.

- **handrail**
  Railing serving as support for the passengers.

- **steering wheel**
  Wheel for steering the engine and hence the boat.

- **outboard engine**
  Detachable engine mounted on the boat's stern.

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**motor yacht**
Pleasure boat of various sizes and speeds with a cabin fit to live in; it can navigate the sea and inland waterways.

- **sundeck**
  Part of the deck for relaxation; it is surrounded by a handrail.

- **handrail**
  Railing serving as support for the passengers.

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**houseboat**
Motorized pleasure boat for navigating inland waterways; it is characterized by a long deck and a cabin fit to live in.

- **fore and aft passage**
  Passageway on the deck that connects the bow and the stern.

- **pilot house**
  Compartment from which the pilot operates the boat.
passenger cabin
Compartment where the passengers sit during the trip.

radio antenna
Metal conductor that emits and receives radio waves for communications.

radar
Detection device that emits radio waves and receives their echo; it is used to avoid collisions and to navigate when visibility is reduced.

compass bridge
Covered glassed-in platform from which officers and crew navigate the vessel.

life buoy
Ring made of buoyant material that is thrown to anyone who has fallen overboard to help them float.

surface-piercing foils
Parts that lift the boat when cruising speed has been reached; they also stabilize the boat.

hydrofoil boat
Fast boat with foils, which lift and support the hull above water when cruising speed is reached.

propeller
Device with blades integrated onto a shaft that is driven by the engine to provide thrust and thus impel the ship.

propeller shaft
Long metal rod that transmits the motor’s rotational movement to the propeller.

front foil
Wing on each side of the prow.

rear foil
Wing on each side of the stern.

strut
Vertical support that connects each foil to the boat’s hull.
**tanker**
Ship with large reservoirs for transporting liquid petroleum products.

**radar mast**
Mast with a radio-wave detection device (radar set) used to prevent collisions when visibility is reduced.

**radio antenna**
Metal conductor that emits and receives radio waves for communications.

**separator**
Device that removes any water that might contaminate the oil tanks.

**guardrail**
Railing along a ship’s deck that protects crew from falling overboard.

**davit**
Winch that manipulates the anchors.

**engine control room**
Compartment housing the instruments that monitor the ship’s movement and control the engines and other machinery.

**propeller**
Device with blades integrated onto a shaft that is driven by the engine to provide thrust and thus impel the ship.

**rudder**
Submerged component that pivots on a vertical axle and is used to steer the boat.

**lengthwise bulkhead**
Wall that divides the hold along the length to demarcate the tanks.

**transverse bulkhead**
Wall that divides the hold across the width thus demarcating the tanks.
derrick
Device with pulleys that is mounted on a pivot for handling loads.

foam monitor
Pressurized mechanism that produces foam for extinguishing fires.

tank
Watertight reservoir; the hold is divided into several tanks to prevent sloshing.

main deck
Flat top that seals the hull and protects the cargo; it provides space for crew to circulate and for auxiliary equipment.

foremast
Mast located near the bow of the deck that supports the navigation lights.

bitt
Metal cylindrical fittings attached to the deck for fastening mooring ropes and tow lines.

crossover cargo deck line
Thick pipe that runs transversally and is used to fill and empty the tanks.

wall side
Vertical part of the hull below the water line.

web frame
Metal reinforcement that spans the hull transversally.

mooring winch
Motorized spool around which a mooring cable is wound.

center keelson
Metal girder that runs along the ship's longitudinal axis to reinforce the bottom of the hull.

bulb
Bulge in the bottom part of the stem that reduces the hull's water resistance.
passenger liner
Large cruise ship, fitted like a luxury hotel and with diverse recreation facilities for passengers.

hall
Room fitted with armchairs for passengers to meet.

funnel
Long vertical pipe above the machinery evacuating exhaust gases from the engines, with filters for absorbing carbon particles.

lounge
Area with a counter and tables where alcoholic drinks are sold.

playing area
Fenced-in area for playing ball sports.

cabin
Room that accommodates one or several passengers.

dining room
Hall for eating meals.

promenade deck
Open deck for strolling that is sometimes glassed in.

stern
Rear end of a ship.

propeller
Device with blades integrated onto a shaft that is driven by the engine to provide thrust and thus impel the ship.

rudder
Submerged component that pivots on a vertical axle and is used to steer the boat.

engine room
Room housing the engines, turbines and related machinery that propel the ship.

stabilizer fin
Small pivoting winglike flaps on each side of the hull to reduce the rolling motion.
telecommunication antenna
Multipurpose antenna that receives and transmits various signals such as video, telephone and digital.

sundeck
Usually the highest and sunniest deck with a pool and lounge chairs.

radio antenna
Metal conductor that emits and receives radio waves for communications.

radar
Detection device that emits radio waves and receives their echo; it is used to avoid collisions and to navigate when visibility is reduced.

open-air terrace
Outdoor platform that is formed from the roof of the deck below and is protected by a guardrail.

compass bridge
Covered glassed-in platform from which officers and crew navigate the vessel.

port hand
Left side of the ship when looking forward.

porthole
Waterproof glassed-in opening in the hull that lets natural light and air into the ship.

captain’s quarters
Lodgings for the captain located aft of the bridge on the starboard side.

bow thruster
Propeller on each side of the stem bulb for maneuvering the ship to port or starboard at slow speeds.

stem bulb
Bulge in the bottom part of the stem that reduces the hull’s water resistance.

starboard hand
Right side of the ship when looking forward.

bow
Foremost part of the ship.
anchor

Usually steel part that is attached to a chain or cable; it hooks onto the bottom of a body of water to keep the boat from moving.

ship's anchor

The traditional anchor is made up of a shank with a stock at one end and two arms ending in palms at the other end.

crown

Point at the end of the shank.

arm

Shank that curves out from the bottom end of the main shank and ends in a palm.

throat

Point where the arms meet the shank.

glory band

Anchor's center of gravity.

hoisting ring

Small ring at the anchor's center of gravity; a rope is attached to it, which is pulled to dislodge the anchor from the bottom of the water.

crown

Point at the end of the shank.

arm

Shank that curves out from the bottom end of the main shank and ends in a palm.

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Point where the arms meet the shank.

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glory band

Anchor's center of gravity.

hoisting ring

Small ring at the anchor's center of gravity; a rope is attached to it, which is pulled to dislodge the anchor from the bottom of the water.
examples of anchors

The weight and the shape of the arms of anchors are designed to hook onto various bottoms (such as firm, loose or reedy).

plow anchor
Anchor with a plow-shaped arm that pivots on the shank and hooks onto most bottoms.

stockless anchor
Relatively light anchor with a pair of pivoting palms that fold along the shank.

sea anchor
Solid cone-shaped canvas sack that is dragged behind a boat to counter heaving and strong winds.

stocked anchor
Relatively heavy and bulky anchor with a stock and two arms ending in palms.

grapnel
Small anchor with four, sometimes folding, cruciform arms.

mushroom anchor
Anchor with a large crown instead of arms.

shank
Long straight rod forming the body of the anchor.

ring
Heavy ring through the eye at the end of the shank; the anchor's cable or rope is attached to it.

stock
Transverse rod perpendicular to the shank; it positions the anchor so that its two arms grip the bottom of the water.
life-saving equipment

Instruments and equipment for signaling a boat’s presence and for saving people from drowning.

**life raft**
Inflatable boat where passengers can take refuge in case of emergency.

**canopy**
Covering that automatically deploys to protect against wind, rain and spray.

**boarding ladder**
Nylon straps that form steps for climbing into the life raft.

**inflation system**
Device containing pressurized air that automatically inflates the buoyancy tubes when the life raft is launched.

**buoyancy tube**
Inflatable tube that serves as a hull to make the raft float.

**fog horn**
Instrument that makes a regulation sound when visibility is reduced to indicate the presence of a boat.

**antenna**
Metal rod that emits the radio signal into the atmosphere.

**distress beacon**
Device that automatically transmits a radio distress signal giving its precise position.

**strobe**
Lamp that produces an intense light from a gas, which glows between two electrodes.

**canister**
Small container of compressed air.

**trumpet**
Bell mouth that amplifies the sound emitted by a diaphragm when compressed air passes over it.
**Life-saving equipment**

**Life jacket**
Buoyant vest filled with air or plastic foam that is used to keep a person afloat.

**Boat hook**
Usually telescopic pole with a tip and a hook; it is used to maneuver a boat alongside quays, to hook an object and to fathom the bottom.

**Life buoy**
Ring made of buoyant material that is thrown to anyone who has fallen overboard to help them float.

**Belt**
Nylon strap that adjusts to the wearer’s size to keep the life jacket in place.

**Leg strap**
Adjustable nylon belt that goes between the legs to prevent the life jacket from riding up.

**Buckle**
Fastener with two elements that hook together and unfasten when pressed.

**Handle**

**Ring**
-Rigid buoyant circle that a person in the water slips under the arms.

**Rope**
Nylon rope that can be caught with the boat hook to hoist a person out of the water.

**Retro-reflective tape**
-Tape that reflects light, making it easier to find a person in the water.
navigation devices

Examples of instruments that are used on a ship to determine its position and to chart and stay a course.

**sexant**
Optical instrument for measuring the angle between a heavenly body and the horizon to determine the ship's position.

**index mirror**
Mirror integrated with the index arm that is positioned so that the Sun reflects on the horizon mirror.

**index arm**
Moving arm on the sextant that measures the displacement angle on the graduated arc to determine the height of the observed heavenly body.

**telescope**
Optical instrument that magnifies an observed object.

**horizon mirror**
Fixed mirror in front of the telescope; it is aimed at the horizon and the image of the Sun is projected on it.

**horizon shade**
Colored glass that blocks certain rays in the light spectrum to filter out ambient light.

**graduated arc**
Arc graduated in degrees; the observed angle measurement is read from it.

**vernier scale**
Small graduated rule that slides along the ruler and is used to read very precise measurements.

**micrometer screw**
Screw with a head graduated in minutes that is turned to set the index arm precisely.

**drum**
Thumbnail for turning the micrometer screw.

**index**
Guide mark that helps to read the graduation marks on the arc.
liquid compass
Instrument with magnets that floats on a liquid; it indicates magnetic north.

sliding cover
Retractable cover that protects the glass dome from scratches when not in use.

pivot
Axle around which the compass card rotates.

satellite navigation system
Device that uses radio signals transmitted by a network of satellites to plot a boat's position and course on a chart.
**echo sounder**
Device that uses ultrasound to measure the depth of the water below the boat.

- **depth scale**
  Line graduated in feet or meters for reading the distance to the bottom.

- **dial-type display**
  Display surface where an illuminated dot appears at the point on the scale that corresponds to the depth.

- **housing**

- **sound alarm**
  Audible signal activated when the alarm threshold is reached.

- **on-off switch**
  Button for activating the sounder and for selecting the scale.

- **gain control**
  Knob for adjusting the amplification of the signal.

- **alarm threshold setting**
  Knob for setting the maximum depth considered to be dangerous.

- **alarm threshold display button**
  Button that is pushed to display the alarm threshold value.

**echo sounder probe**
Part of the sounder that is submerged to send the ultrasound to the bottom; it receives the echo and converts it into sound.

- **transducer**
  Part of the echo sounder probe that emits the ultrasound and receives its echoes.

- **transmission cable**
  Electric wire that relays the electric signals between the housing and the echo sounder probe.

- **plug**
  Metal prong that plugs into the housing.
Beacons and devices located on the sea, coasts and waterways that emit light, sound and radio waves to aid navigation.

**lighthouse**
Tower with a powerful lamp at the top for guiding ships.

- **lantern pane** Framed panes of glass that protect the lantern and support the cupola.
- **lantern** Powerful lamp that projects an encoded beam.
- **cupola** Roof protecting the lantern; it is equipped with a lightning rod.
- **gallery** Narrow platform with a guardrail that provides a panoramic view from the lighthouse.
- **tower** Concrete structure that forms the lighthouse's body; it is resistant to waves and very strong winds.
- **incandescent lamp** Lamp in which a filament heated by an electric current produces light rays.
- **lamp base** Metal end of a lightbulb inserted into a socket to connect it to the electric circuit.
- **dioptic ring** Concentric glass rings surrounding the lantern that refract its rays to intensify them.
**high focal plane buoy**
Floating beacon whose light is especially high above the surface of the water.

**light**
Encoded light beam that serves as a navigation aid at night.

**radar reflector**
Metal part that reflects ships' radar signals so they can locate the buoy.

**photovoltaic panel**
Device that converts solar energy into electricity to power the light.

**daymark**
Navigation aid that is visible by day only; it displays various colors and signage.

**ladder**
For accessing the components at the top of the tubular structure.

**tubular structure**
Columnar part of the superstructure that supports the day- and nightmarks and keeps them above the water.

**pillar buoy**
Floating beacon with a pylon-shaped superstructure.

**conical buoy**
Floating beacon with a cone-shaped superstructure.
cylindrical buoy
Floating beacon with a cylindrical superstructure.

- topmark: Metal cone-shaped part atop a buoy that serves as a navigation aid during the day; its position signifies various meanings.
- light: Encoded light beam that serves as a navigation aid at night.
- photovoltaic panel: Device that converts solar energy into electricity to power the light.
- daymark: Navigation aid that is visible by day only; it displays various colors and signage.
- bridle assembly: Two chains that link the flotation section to the mooring chain.
- flotation section: Lightweight base that keeps the buoy afloat and upright.
- superstructure: Metal frame that forms the buoy’s body and contains all its elements.
- sinker: Heavy object often made of concrete; it rests on the bottom of the waterway to keep the buoy in place.
- mooring chain: Long, very sturdy chain that links the buoy to the sinker.

maritime signals
Buoys, beacons and lights located along coasts and waterways to guide ships and boats.

**cardinal marks**
Buoys of standardized colors, topmarks and lights whose placement alone or in a pattern corresponds to the divisions of a compass.

- **white light**
  White flashing light whose flash pattern serves as a cardinal mark at night.

- **North**
  The north cardinal mark is composed of two topmarks with both tips pointing upward.

- **Northwest**
  The west cardinal mark is composed of two topmarks placed tip to tip.

- **Northeast**
  The east cardinal mark is composed of two topmarks placed base to base.

- **North**
  The north cardinal mark is composed of two topmarks with both tips pointing upward.

- **West**
  The west cardinal mark is composed of two topmarks placed tip to tip.

- **South**
  The south cardinal mark is composed of two topmarks with both tips pointing downward.

- **Southwest**
  The south cardinal mark is composed of two topmarks with both tips pointing downward.

- **Southeast**
  The south cardinal mark is composed of two topmarks with both tips pointing downward.

- **danger**
  Buoys signal shallow waters, submerged objects or objects posing a hazard to a boat or a ship.

- **safest water**
  Navigable water is deep enough that it is safe to proceed.
buoyage regions

The color of the buoys that indicate starboard and port is the opposite in various parts of the world.

**port hand**
Left side of the ship when looking forward.

**starboard hand**
Right side of the ship when looking forward.
**daymarks (region B)**
System B combines lateral and cardinal marks. It is the opposite of system A, in which starboard marks are red and port marks are green.

**spar buoy**
Long tubular buoy used in harbors and in waters that have no tides.

**East cardinal mark**
Buoy with two base-to-base topmarks that is placed to the east of a danger zone.

**special mark**
Buoy marking an area that is regulated for a specific use (such as military exercises or fishing) or contains submerged obstacles (such as cables or pipelines).

**isolated danger mark**
Buoy marking an isolated danger zone beyond which the waters are navigable.

**safe water mark**
Buoy signaling that the water is navigable.

**preferred channel**
Navigation lane with beacons; it is the shortest and safest way to a harbor or for navigating near a coast or through a waterway.
Starboard hand
Mark the ship must keep on the right side of its prow as it navigates a channel.

Light
Encoded light beam that serves as a navigation aid at night.

West cardinal mark
Buoy with two point-to-point topmarks that is placed to the west of a danger zone.

Port hand
Mark the ship must keep on the left side of its prow as it navigates a channel.

Starboard hand
Mark the ship must keep on the right side of its prow as it navigates a channel.

Conical buoy
Floating beacon with a cone-shaped superstructure.

South cardinal mark
Buoy with two topmarks pointing downward that is placed to the south of a danger zone.

Secondary channel
Navigation lane with beacons that is longer or more difficult than the preferred channel.

Lateral mark
Red or green buoy that indicates the port or starboard limits of the channel.

Pillar buoy
Floating beacon with a pylon-shaped superstructure.

Maritime buoyage system
Maritime transport
airport

Location that contains all the technical and commercial facilities needed to support air traffic.
access road
Part of the network of roads serving the airport.

taxiway
Lane used by aircraft for entering or exiting a takeoff or landing runway.

taxiway line
Yellow line painted on the ground that shows aircraft the route to follow on the apron or the maneuvering area.

boarding walkway
Underground corridor linking the main terminal with a radial passenger loading area.

boarding walkway
Underground corridor linking the main terminal with a radial passenger loading area.

maneuvering area
Area crossed by an aircraft to enter or exit a parking spot.

maintenance hangar
Structure where aircraft are maintained and repaired.

parking area
Area where aircraft park between flights for maintenance or overhaul.

parking area
Area where aircraft park between flights for maintenance or overhaul.

passenger terminal
Structure through which passengers pass before or after their flight to pick up or leave their baggage and to go through customs.

passenger terminal
Structure through which passengers pass before or after their flight to pick up or leave their baggage and to go through customs.

service area
Area around an aircraft that is reserved for service vehicles and ground crew attending to arriving or departing aircraft.

radial passenger loading area
Pavilion for passengers to reach aircraft that is linked by an underground corridor or by vehicles with the main terminal.

radial passenger loading area
Pavilion for passengers to reach aircraft that is linked by an underground corridor or by vehicles with the main terminal.

service area
Area around an aircraft that is reserved for service vehicles and ground crew attending to arriving or departing aircraft.

telescopic corridor
Mobile corridor connecting the passenger loading area with the aircraft.

telescopic corridor
Mobile corridor connecting the passenger loading area with the aircraft.

service area
Area around an aircraft that is reserved for service vehicles and ground crew attending to arriving or departing aircraft.

service area
Area around an aircraft that is reserved for service vehicles and ground crew attending to arriving or departing aircraft.

apron
Lane used by aircraft for entering or exiting the maneuvering area.
**passenger terminal**
Structure through which passengers pass before or after their flight to pick up or leave their baggage and to go through customs.

**lobby**
Large entrance hall of the terminal for passengers and the people accompanying them.

**platform**
Area bordering the track for passengers to enter or exit the railroad shuttle service.

**railroad shuttle service**
Train that runs frequently between the terminal and the city or the nearest station.

**ticket counter**
Desk where an airline or travel agent sells tickets for flights.

**conveyor belt**
Mechanized rubber belts transporting luggage from the reception area to the baggage claim area.

**baggage claim area**
Area where the baggage conveyor belt emerges for passengers to pick up their luggage.

**baggage check-in counter**
Desk where an employee checks and weighs passengers' baggage and issues boarding passes.

**parking lot**
Area for parking vehicles.

**air transport**
security check
Mandatory checkpoint for passengers before boarding where their identification and luggage are inspected.

observation deck
Mezzanine that is open to the public and overlooks the departure and arrival area and the runways.

passport control
Booth where passengers show their passports before entering or leaving the boarding room.

duty-free shop
Store located near the boarding room where tax-free goods are sold (e.g., perfume, alcohol, leather goods).

flight information board
Panel listing and updating all the airport's arrivals and departures as well as the flight departure gate numbers.

boarding room
Room where passengers wait before boarding.

customs control
Booth where passengers from international flights show their passports upon arriving and declare any imported merchandise.

freight expedition
Room where luggage and cargo are inspected, sorted and loaded onto carts transporting them to the aircraft.

freight reception
Room where luggage and cargo that have been unloaded from the cargo hold are transferred to the conveyor belt, which in turn moves them to the baggage claim area.

passenger transfer vehicle
Vertically adjustable vehicle with a cabin for transporting passengers between the aircraft and the terminal.
airport

runway
Strip of land on which an aircraft speeds up before takeoff or brakes after landing.

holding area marking
Line that shows an aircraft where to wait for clearance from the control tower before entering the runway for takeoff.

runway designation marking
Number that, when multiplied by 10, shows the runway's position in relation to magnetic north.

runway center line markings
Wide broken white line that shows the center of the runway.

runway side stripe markings
Wide solid white line that marks the edges of the runway.

ground airport equipment
Equipment and materials for preparing an aircraft for its next flight; this includes cleaning, performing checks, refueling and boarding.

air start unit
Vehicle that is equipped with an air compressor driven by a gas turbine; it pumps air into the aircraft's jet engines to start them.

jet refueler
Truck that pumps fuel from underground tanks into the aircraft's tanks.

potable water truck
Truck that fills the aircraft's water tanks with drinking water.

electrical power unit
Vehicle that is equipped with a transformer to provide electricity to the aircraft when its auxiliary generator set is at rest.
exit taxiway
Lane connecting the runway with a taxiway so that incoming aircraft can exit the runway as soon as possible after landing.

lavatory truck
Truck that empties and cleans the aircraft’s toilets.

tow bar
Device that connects the tow tractor to the aircraft’s front landing gear.

tow tractor
Very heavy vehicle that pulls or pushes an aircraft onto the maneuvering area or the parking area.

fixed distance marking
Lines painted at regular intervals so that pilots can gauge distances on the runway.

runway threshold markings
Longitudinal lines painted at each end of the runway to show its limits.

runway touchdown zone marking
Pair of lines painted at each end of the runway that shows where aircraft should touch down on the runway.

ground air conditioner
Truck that contains a device for treating the aircraft’s interior air (ventilation and cooling or heating) when the aircraft is at rest.
**wheel chock**
Object that is placed against the landing gear’s wheels to keep the aircraft stationary when on the ground.

**aircraft maintenance truck**
Vehicle that is used by technical maintenance crew when servicing an aircraft.

**universal step**
Mobile staircase that is positioned manually at an aircraft door to allow passengers to enter or exit.

**tripod tail support**
Adjustable tripod that supports part of the aircraft (the tail or a wing) when maintenance or repairs are carried out.

**container/pallet loader**
Vehicle whose articulated arms raise and lower a level platform for loading and unloading heavy cargo such as containers and cargo on pallets.

**mobile passenger stairs**
Truck that carries a telescopic staircase, which is positioned at an aircraft door to allow passengers to enter or exit.

**boom truck**
Vehicle that is equipped with a bucket at the end of an articulating pivoting arm; technicians stand in it to work on aircraft.
**tow tractor**  
Vehicle that pulls the baggage trailer.

**baggage trailer**  
Flat trailer or cart that carries containers in which baggage is transported from the terminal to the aircraft.

**baggage conveyor**  
Conveyor belt of adjustable height for loading and unloading baggage and cargo.

**catering vehicle**  
Truck whose box can be lifted up to the aircraft; it delivers the food and drink to be served to passengers.

**passenger transfer vehicle**  
Vertically adjustable vehicle with a cabin for transporting passengers between the aircraft and the terminal.
long-range jet

Aircraft that transports passengers and cargo traveling long distances at high altitudes (between 30,000 and 40,000 ft).
flight deck
Compartment that contains navigation equipment and controls and from which the crew pilots the aircraft.

**autopilot controls**
Device that enables the aircraft to be piloted and kept on course automatically.

**engine and crew alarm display**
Screen that controls the engines and displays alarm signals in the event of system failure.

**standby attitude indicator**
Screen that shows the aircraft's position in relation to the horizon; it is used in the event the flight display fails.

**standby airspeed indicator**
Instrument that shows the aircraft's speed; it is used in the event the flight display fails.

**standby altimeter**
Instrument that shows the vertical distance between the aircraft and the ground; it is used in the event the flight display fails.

**systems display**
Screen that controls various systems, such as air pressure and the electric and hydraulic circuits.

**speedbrake lever**
Command stick that releases the wing flaps to brake the aircraft immediately after landing.

**throttles**
Control levers for the engines; they regulate speed and thrust.

**captain's seat**
Left seat occupied by the pilot, who is in charge of the flight and the crew.

**communication panels**
Panel for selecting radio frequencies on which pilots can send or receive.

**engine fuel valves**
Knobs for opening and shutting the fuel supply to the engines.
landing gear lever
Control for lowering and raising the landing gear.

overhead switch panel
Panel made up of the switches that cut the hydraulic, electric and fuel circuits.

windshield
Highly durable pane made of glass and plastic that provides good visibility.

navigation display
Screen that shows the aircraft’s position and flight plan and weather conditions.

primary flight display
Screen that shows the main parameters necessary for piloting (aircraft’s position in relation to the horizon, altitude and course).

control column
Steering component that causes an aircraft to bank to the left or to the right and to ascend or descend.

control wheel
Lever that activates the control column from back to front and from side to side.

transponder
Instruments that, with the autopilot, control the engine power and guide the aircraft on its course.

first officer’s seat
Right seat occupied by the copilot, who is second in command.

control console
Component located between the two seats that contains part of the instrumentation.

flap lever
Control stick that activates the wing slats and the trailing edge flaps.
**turbofan engine**

Jet engine with a fan and two airflows; one airflow passes through the combustion chamber and the other bypasses it.

- **pipe diffuser**: Conduit with several exit orifices that connects the centrifugal compressor to the combustion chamber; its purpose is to direct the flow and slow down the airflow to increase its pressure.
- **annular combustion chamber**: Enclosure consisting of two concentric hydraulic cylinders that surrounds the turbine-compressor shaft and where combustion occurs.
- **compressor turbine**: Turbine that is activated by the gas produced in the combustion chamber; it drives the centrifugal compressor and the accessories.
- **outer stators**: Set of fixed blades that corrects the airflow that is deflected as it passes through the fan.
- **inner stators**: Set of fixed blades that corrects the airflow that is deflected as it passes through the blades of the axial compressor.
- **centrifugal compressor**: Engine components that use centrifugal force to compress air and expel it at very high speed to the combustion chamber by the pipe diffuser.
- **nose cone**: Part located on the tip of the fan axle that creates an aerodynamic airflow into the fan blades.
- **axial compressor**: Engine component in which air is highly compressed by a set of small fan blades to increase the engine's output and reduce fuel consumption.
- **turbine-compressor shaft**: Axle transmitting the turbine's rotational movement to the compressors.
- **accessory gearbox**: Mechanism that drives various accessories such as the alternator and the hydraulic, fuel and oil pumps.
- **fuel control**: Device measuring the amount of fuel injected into the combustion chamber.
- **ignition box**: Device that produces the electric pulses supplying the system that sets off combustion.
**power turbine**
Turbine that is driven by the gases expelled by the combustion chamber; it drives the axial compressor and the fan. It is independent of the compressor turbine.

**bypass duct**
Channel that conducts some of the air sucked in by the fan, which contributes to the engine's thrust.

**exhaust guide vanes**
Protruding parts directing the exhaust gases straight out.

**compression**
Phase during which some of the air flowing through the engine is compressed before it enters the combustion chamber.

**combustion**
Phase during which the compressed air enters the combustion chamber, where it is mixed with fuel and ignited.

**exhaust duct**
Opening through which the exhaust gases are evacuated; the duct is usually cone-shaped in order to narrow the gas flow, thus increasing thrust.

**exhaust**
Phase during which the air expands and produces a thrust that activates the turbines and propels the turbofan engine.

**fan**
Blower sucking air into the turbofan engine.
examples of airplanes

Ever since the first airplane, Éole, in 1890, the shape of aircraft has evolved constantly as new aerodynamic discoveries were made and engine power increased.

float seaplane
Airplane designed to take off from and land on water.

three-blade propeller
Propulsion device with three blades that are arranged around an axle and driven by a motor.

high wing
Wing mounted on top of the fuselage.

wing strut
Rigid or flexible component that braces an airplane’s wing and connects the wing to the fuselage or connects the two wings on a biplane.

float
Watertight structure attached under the fuselage that enables the seaplane to float and move on water.

biplane
Airplane with two superimposed and parallel sets of wings.

upper wing
Wing mounted on top of the fuselage.

lower wing
Wing mounted below the fuselage.

wings
Surfaces upon which aerodynamic forces are exerted to cause the airplane to fly.

light aircraft
Airplane that usually has a single engine and cruises between 90 and 150 mph; it is used for recreation and traveling short distances.

three-blade propeller
Propulsion device with three blades that are arranged around an axle and driven by a motor.

two-blade propeller
Propulsion device with two blades that are arranged around an axle and driven by a motor.

high frequency antenna cable
Wire enabling radio communication for the aircraft.

canopy
Glassed covering over the cockpit.
amphibious fire-fighting aircraft
Airplane with large water tanks; it is used to fight forest fires.

supersonic jetliner
Passenger aircraft whose cruising speed (1500 mph) is faster than the speed of sound (761 mph). The Concorde was the best known commercial aircraft of this type.

droop nose
Articulated nose that is lowered on takeoff and landing to provide the pilot with better visibility.

variable ejector nozzle
Duct whose mouth widens as the plane climbs, thus enabling the engines to increase output.

delta wing
Thin triangular wing that is especially aerodynamic.

three-blade propeller
Propulsion device with three blades that are arranged around an axle and driven by a motor.

water-tank area
Area with a hatch that scoops up water from the surface of a body of water to fill its tanks so that it can dump the water in flight.

float
Watertight structure that prevents the airplane from tipping when it fills its tanks.
examples of airplanes

**business aircraft**
Airplane with a limited number of seats; it is usually used by heads of corporations for business trips.

**cargo aircraft**
Plane with large freight capacity; it is used to transport goods.

**superjumbo jet**
Airplane that can transport a large number of passengers (more than 500).

**winglet**
Protruding surface at the wingtip that enhances aerodynamics.
**stealth aircraft**
Aircraft that cannot be detected by radar because of the radar-absorbing facets covering its fuselage.

**vertical take-off and landing aircraft**
Airplane that can move vertically in order to take off from and land on short runways; it is usually used in combat.

**radar-absorbent material**
Material that absorbs radar waves before they strike any metal part of the aircraft in order to muffle the sound of the echo.

**facet**
Flat surface with a protruding edge that disperses any radar waves hitting it and makes them undetectable.

**swiveling nozzle**
Duct that can be pointed downward to increase the engine's vertical thrust during vertical landing and takeoff.

**rotodome**
Domelike rotating structure that houses radar antennae.

**strut**
Structure that supports the rotodome.

**radar aircraft**
Surveillance aircraft for locating and identifying aircraft in flight.
**Combat Aircraft**

Military aircraft used for attack purposes.

**Parachute**
Device that opens from the tail of the aircraft to reduce speed on landing.

**Exhaust Nozzle**
Conduit through which hot gases from the turbojet engine are released.

**Air Brake**
Aerodynamic flap at the back of the aircraft; it is used to reduce speed on landing.

**Turbojet Engine**
Jet-propulsion turbine producing hot gases that are expelled at high speed to provide the thrust necessary to propel the aircraft.

**Air-to-Air Missile**
Missile fired from a helicopter or an aircraft; its target is an aircraft or another missile.

**Canopy**
Glass window covering the cockpit.

**Ejection Seat**
Seat designed to be projected from the aircraft in the event of an emergency.

**Front Landing Gear**
Retractable mechanism that enables the aircraft to land; it is located at the front end.

**Wing Box**
Metal substructure of the wings; the trailing and leading edge flaps are connected to it.

**Fuel Tank**
Reservoir containing the fuel that allows the aircraft to fly.

**Radar Unit**
Device that uses radio waves to detect objects such as other aircraft.

**Radome**
Rigid casing that radio waves can pass through; it protects the radar system.

**In-Flight Refueling**
Action of refueling a plane from a tanker in flight.
forces acting on an airplane

Physical phenomena that affect the movement of an aircraft in flight.

lift
Force exerted on an aircraft's wings to keep it in the air when a certain forward speed is reached.

drag
Force opposite to thrust that creates resistance to the aircraft's forward movement and must be reduced.

thrust
Force developed by the engine's propeller pulling it forward; in jet aircraft, thrust is created by the force of the ducts.

weight
Force resulting from the effect of the Earth's gravity acting on the aircraft's mass; the force of the engines must overpower this to keep the aircraft in the air.

movements of an airplane

Changes exerted on an aircraft in flight that affect its behavior; a pilot must know how to correct them.

pitch
Rotational movement of an aircraft around its transverse axis; it is caused by an imbalance of pressure on the nose and tail.

yaw
Aircraft's rotational motion around its vertical axis; it is caused by an imbalance of pressure on the leading edges of the wings.

roll
Rotational movement of an aircraft around its longitudinal axis; it is caused by an imbalance in the lift of the wings.
**helicopter**

Aircraft whose lift agent is a rotor on a vertical axle.

- **air inlet**: Opening through which air enters to supply the helicopter's engine.
- **drive shaft**: Part driven by the engine that transmits its rotational movement to the hub.
- **sleeve**: Part of the hub to which the blades are attached.
- **rotor hub**: Center part of the rotor head that connects the driveshaft to the blades.
- **rotor head**: Rotating mechanism that transmits the required power and angle.
- **cabin**: Compartment where the passengers ride.
- **flight deck**: Compartment that contains navigation equipment; the pilot operates the helicopter from here.
- **control stick**: Lever for changing the rotor's tilt; it is used to steer the helicopter.
- **antenna**: Antenna that receives and transmits radio signals to communicate with the control tower or another aircraft.
- **landing window**: Window by the pilot's feet for seeing the ground when landing.
- **landing light**: Spotlight that is aimed at the ground for landing at night.
- **fuel tank**: Reservoir for the helicopter's fuel.
position light
Light visible from afar that signals the helicopter’s presence.

anti-torque tail rotor
Rotor on a horizontal axle that prevents the helicopter from spinning due to the effect of the main rotor.

tail skid
Support attached to the tail end of the boom that protects it and the anti-torque tail rotor in the event of a landing with the nose up.

fin
Fixed vertical part mounted on the tail boom to keep the helicopter flying straight.

horizontal stabilizer
Horizontal wing mounted on the tail boom to stabilize the helicopter’s horizontal movement.

tail boom
Long part of the helicopter’s frame that contains a propeller shaft and supports the rear rotor, fin and stabilizers.

exhaust pipe
Opening through which the exhaust gases are evacuated.

rotor blade
Long streamlined part of the main rotor that, depending on its angle, lifts and propels the helicopter.

baggage compartment
Compartment for storing luggage.

skid
Tube on which the helicopter lands and rests.
Because they can take off and land vertically, helicopters are more effective than airplanes in certain situations.

**tactical transport helicopter**
Armed military helicopter for transporting troops, small combat vehicles and various objects.

**water bomber helicopter**
Helicopter with a water tank that is used to fight forest fires.

**ambulance helicopter**
Helicopter for transporting the sick and injured and providing medical assistance.

**belly tank**
Tank filled with water by a long pipe hanging underneath; it uses a hatch to empty the water in flight.

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