Term	PART ONE	Pg
Keel	A weighted fin that, when attached to the bottom of a sailboat, keeps the boat	1/17
	from slipping sideways in the water and allows it to sail upwind.	
Centerboard	A wooden or metal fin housed in the centerboard trunk that serves the same	1/17
	purpose as a keel. It can be lowered to overcome the boat's lateral motion.	
Hull	The main body of the boat.	1/17
Beam	The maximum width of the hull.	1/17
Deck	The horizontal upper surface of the boat.	1/17
Stern	The back of the boat.	1/17
Bow	The front of the boat.	1/17
Aft, After	Towards the stern.	1/17
Forward	Towards the bow.	1/17
Windward	Toward the wind.	1/17
Leeward	Away from the wind.	1/17
Rudder	The fin at the stern of the boat used for steering.	1/17
Tiller	The wooden or metal steering arm attached to the rudder. It is used as a lever	1/17
	to turn the rudder.	
Tiller Extension	A wooden or metal pivoting extension attached to the tiller. It is usually found	1/17
****	in dinghies and enables the skipper to steer accurately while hiking out.	4 /4 =
Wheel	On larger boats the wheel replaces the tiller and is used to turn the rudder.	1/17
Mast	The vertical pole or spar that supports the sails and boom. The top of the mast is called the masthead.	1/17
Boom	The horizontal spar which is attached to the mast to support the bottom part of	1/17
	the mainsail.	
Hiking Out	Leaning the weight of the crew over the windward side to help keep the boat on an "even keel."	1/17
Port	The left side of the boat as you face forward.	1/17
Starboard	The right side of the boat as you face forward.	1/17
Mainsheet	The line used to make the major adjustments to the trim of the mainsail.	1/18
Boomvang	An adjustable tackle or rod that prevents the boom from lifting. A rod-type boomvang also keeps the boom from dropping on deck.	1/18
Lifelines	Plastic-coated wires enclosing the deck to keep the crew from falling overboard. Lifelines are suspended from metal supports, called pulpits and stanchions.	1/18
Traveler	A slide, running across the boat, to which the mainsheet is led. The crew can change the trim of the mainsail by adjusting the slide position.	1/18
Topsides	The sides of the hull above the waterline.	1/18
Standing	A collection of wires that supports the mast. On more sophisticated boats, the	1/18
Rigging	standing rigging is more complex and can be adjusted to optimizes a sail's	_, _,
	performance.	
Headstay	A wire that runs from the top of the mast (or near the masthead) to the bow	1/19
(Forestay)	and onto which the jib is attached. It supports the mast, preventing it from	
•	falling backwards.	
Backstay	A wire that runs from the top of the mast to the stern and supports the mast.	1/19
Shrouds	Wires that run from the masthead (or near the masthead) to the sides of the	1/19

(Sidestays)	boat to support the mast and prevent it from swaying.	
Sails	The power supply of the sailboat. They are most frequently made of Dacron, a synthetic fiber, used because of its resistance to stretching. Other materials	1/19
	such as nylon, Mylar, and Kevlar are also used in sailmaking.	
Mainsail	The primary and most easily controlled source of sail power, attached along the front edge to the mast and along the bottom edge to the boom.	1/21
Spinnaker (Chute)	A balloon like sail, often colored, used when running with the wind.	1/21
Jib (Headsail)	The sail set forward of the mainsail and attached to the forestay using jib hanks.	1/21
Genoa (Headsail)	A large jib with an overlap aft of the mast.	1/21
Head	The top corner of the sail.	1/21
Tack	The forward lower corner of the sail.	1/21
Clew	The back lower corner of the sail.	1/21
Luff	The leading edge (front) of the sail. The luff of the mainsail attaches to the mast, and the luff of the jib attaches to the forestay.	1/21
Foot	The bottom edge of the sail. The foot of the mainsail attaches to the boom. The foot of the jib is unattached and consequently more difficult to control.	1/21
Leech	The trailing (back) edge of the sail.	1/21
Battens	Support sticks held in pockets to keep the leech from flapping and to add support to the sail.	1/21
Draft	The fullness or roundness of the sail.	1/21
Running	Consists of lines that pull the sails up and adjusts the sail's shape. Unlike the	1/21
Rigging	standing rigging, the running rigging is not stationary. When sailors speak of 'trimming' sails to find the most efficient shape, they mean that the sheets are being let out (eased) or pulled in (trimmed).	
Halyards	Lines used to raise (hoist) sails and hold them up. They attach to the top or head of the sail and run through the top of the mast by means of a sheave or block (pulley) and then down to the bottom of the mast. Halyards can be internal (inside the mast) or external (outside the mast). Halyards sometimes terminate at the base of the mast, requiring the crew to be at the mast when hoisting and lowering the sails. A better system is to have the halyard lead back to the cockpit through turning blocks and padeyes (blocks and eyes through which a line is threaded to give it a clear, safe run). The sail can then be hoisted or lowered by the crew without leaving the cockpit.	1/21
Mainsheet	A line used to trim the mainsail; it is lead through a series of blocks to form a block and tackle.	1/21
Jib Sheets	Two lines, one on each side of the boat, to trim the jib.	1/21
Topping Lift	Part of the running rigging that prevents the boom from dropping on deck.	1/21
Downhull	The line attached to the tack of the sail, used to trim the draft forward.	1/21
Outhaul	The line that attaches to the clew and is used to tension the foot of the sail.	1/21
Cunningham	A block & tackle system used to exert tension on the luff of a sail.	1/21
Winches	Located on the mast or deck to assist in the hoisting of sails. They pull lines mechanically and consist of a drum that rotates only in a clockwise direction	1/21

	around which the line is wrapped and a crank handle to rotate the drum.	
Sheets	Control the shape of the sail and sail trim or position of the sail.	1/22
Mainsheet	A multiple block and tackle used to increase an individual's pulling power.	1/22
Jib Sheet	Consists of two lines connected to the clew of the jib that lead along each side	1/22
	of the boat to the cockpit. A Windward sheet is lead along the windward side	
	of the boat and is the non-working or "lazy" sheet and will be slack. A	
	Leeward sheet is lead along the leeward side of the boat and is the working	
	sheet. As the side of the boat the wind is blowing from changes, reference to	
	the windward or leeward jib sheets changes.	
Bowline	Knot that attaches the jib sheets to the clew of the jib.	1/22
Block	Pulley	1/22
Cleat	Wooden, plastic or metal fitting used to secure lines	1/22
Figure Eight	A stopper knot.	1/22
Crew Capacity	Length x width ÷ 15.	1/28
Formula		
PFD	Personal Floatation Device	1/37
Gooseneck	Fitting that attaches the boom to the mast.	1/37
Tack Pin	The pin that holds the tack of the sail to the boom.	1/37
Outhaul	The line that attaches to the clew of the mainsail and is used to tension the foot	1/37
	of the sail.	
Hanked	Attaching the luff of the jib onto the head stay with small brass snap fittings	1/39
	on the jib.	
Point of Sail	A sailboat's directional heading with respect to the wind.	1/45
	 Head to wind (In Irons) – main & jib in tight 	
	• Close hauled (point of sail closest to wind) – main & jib sheeted in	
	close and the boat is steered as close to the wind as possible without	
	the sails luffing.	
	• Close reaching (Boat sails across the wind at an angle. Wind is forward	
	of abeam) – main & jib trimmed out slightly on leeward side	
	• Beam reaching (boat sails across the wind at 90° angle; wind is	
	directly abeam) – main & jib trimmed out a little more on leeward side	
	Broad reaching (boat sails across the wind at an angle; wind is comes	
	from aft of abeam) – main & jib trimmed out almost 90° on leeward	
	side	
	• Running (wind comes from directly behind) – Main eased all the way	
D +: C	out on windward side & jib eased out on leeward side (winged)	1 / 4.5
Beating Course	Wind is from ahead.	1/45
Reaching	Wind is from the side.	1/45
Course	Windin Commenter	1/45
Running Course	Wind is from astern.	1/45
Sail Trim	Set of the sail in relation to the boat and the wind.	1/45
Trim	Adjust the sail's position by pulling in or letting out the sheet.	1/45
Coming About	Changing course by turning the boat into and through the wind until the sails	1/49
(Tacking)	move from one side of the boat to the other.	1/40
Starboard Tack	The wind comes over the starboard or right-hand side of the boat. The boom is	1/49

	always on the port side of the boat.	
Port Tack	Wind comes over the port or left-hand side of the boat and the boom is to	1/49
roit rack	starboard.	1/49
Jibing	Turning the boat away from the wind until the wind crosses the stern of the	1/49
Jionig	boat and the sail moves to the opposite side of the boat.	1/4/
Bearing Away /	Boat turns away from the wind.	1/49
Bearing Off	Bout tains away from the wind.	17 19
Telltales	Pieces of yarn attached to the sails & rigging to help in reading the wind. If	2/67
	pointing too close to the wind, the sail is under trimmed & the windward	
	telltail will flutter up & down. Adjust course away from the wind or trim sails.	
	If pointing too low or the sail is overtrimmed (trimmed too tightly), the	
	leeward telltales will flutter up and down. Head closer to the wind or ease	
	sails.	
Masthead Fly	Wind pennant placed at the top of the mast.	2/68
Apparent Wind	The wind you feel while sailing. The apparent wind is forward of true wind.	2/69
True Wind	Actual direction the wind is blowing over the water.	2/69
Lateral	Resistance to side slipping due to the keel or centerboard	2/70
Resistance		
Center of	Point on the centerboard, keel or hull under the water that acts like a pivot for	2/70
Lateral	the whole area of lateral resistance.	
Resistance		
Center of Effort	Acts as a pivot on the sails. When both are in the same vertical plane, the boat	2/70
	is in balance and easier to steer.	
Heel	Tipping of boat. Heeling lengthens the boats waterline that allows the boat to	2/70
<u> </u>	go faster by creating a longer wave length.	2/70
Leeway	When a boat heels over too far, it will begin to slide sideways.	2/70
Weather	Created by heeling and the wind on the sails. It is the tendency of the boat to	2/71
(Windward)	round up into the wind when you let go of the tiller. To reduce, (a) hike out	
Helm	until the boat is flat; (b) head the boat slightly into the wind to reduce heel; (c)	
Lag (Lagyyard)	easing the sails; (d) flatting the sails.	2/71
Lee (Leeward) Helm	When you let go of the tiller and the boats steers away from the wind you have lee helm.	2//1
Heading Up	Steering toward the wind	2/72
Bearing Away	Steering away from the wind	2/72
Beating to the	Sailing close hauled.	2/72
Windward	Summing crose naured.	2/12
Balanced	A boat will sail in a straight line with little action on the tiller. Most boats	2/73
	perform best when there is some weather helm.	2,73
Surfing	When sailing downwind, the boat is pushed by the waves as they pass under	2/74
	the hull.	_, , .
Head to Wind	Point of sail: Boat pointed directly into wind and sails luffing.	2/76
By the Lee	Point of sail: On a run, when the wind blows on the same side of the boat on	2/76
J	which the mainsail is set. Could cause an accidental jibe.	
Rules of the	Inland Rules of the Road	2/77
Road /	International Rules of the Road	

navigation		
Rules /	When approaching another sailboat	
Collision	A boat on port tack shall give way to one on starboard tack	
Regulations	A boat to windward shall give way to a leeward boat when on the same	2/78
	tack.	2/78
	A boat that is astern or overtaking shall give way to a boat ahead	2/79
	A boat coming about or jibing shall give way to a boat on a tack. If the shall give way to a boat on a tack.	2/79
	• If one boat is running and the is close-hauled and they are on the same	2/79
	tack, the close-hauled boat must hold its course and speed while the	
	running boat takes avoiding action – Running boat is to windward of the close-hauled boat.	
	 If both vessels are running, but one is on a port tack and the other is on 	2/79
	a starboard tack, then the boat on the starboard tack is the stand-on vessel.	2/19
	When approaching a powered vessel	
	When a sailboat is overtaking another boat, no matter how the other	2/79
	boat is propelled, the sailboat is the give-way vessel.	2/79
	Commercial fishing boats must not be interfered with.	
	• In a narrow channel or confined area, a sailboat must not hamper the	2/79
	safe passage of power driven vessels that can navigate only inside such	
	channel or area.	
Give-Way	The boat that must give right away to the other (give way or stay clear).	2/77
Vessel		
Stand-on Vessel	The boat with right away and allowed to stay course.	2/77
"Ready About"	Helmsman order that tells the crew to prepare to come about by putting the windward jib sheet around the winch.	2/83
"Ready"	Crew response (they have made sure the jib sheets are clear and the boat is	2/83
J	ready to come about	
"Hard Alee"	Helmsman command – the tiller is being pushed to the leeward side of the	2/83
	boat, and the boat is starting to turn.	
"Prepare to	Helmsman command – the crew prepares to pull in on the sheets	2/83
Head Up"		- /0-
"Trim Sheets"	Helmsman command – the tiller is moved slightly to leeward. and the sheets	2/83
	are pulled in as the boat is turning.	2/02
Groove	Best angle to the wind.	2/83
Sailing Closed-	Most difficult point of sail for the helmsman. The closer one sails to the wind,	2/83
Hauled	the slower the boat will go. For upwind sailing: (1) sails trimmed; (2) head up,	
	easing tiller to leeward; (3) turning boat until the sail just begins to luff; (4) when sail begin to luff, bear slightly windward just until sails cease luffing.	
Cracyya		2/02
Groove Sailing On A	The happy medium of best angle to the wind Expose as much sail as possible. Sail as low a course as possible and yet	2/83 2/85
Run		2/03
Wing-and-wing	maintain speed. Ease sails out as far as one can without letting them luff. Running before the wind with the sails set on both sides.	2/85
"Prepare to	Helmsman command – the crew prepares to pull on the sheets	2/03
riepaie to	1 Hermisman Command – the crew prepares to pull on the sheets	

jibe"		
"Jibe ho"	Helmsman command – tiller is pulled windward and the boat starts to turn	2/86
	away from the wind	
Sailing on a	Helmsman maintains a straight course; the crew trims the sails by easing them	2/86
Reach	out until they luff and pulling the sheets in until the luffing stops.	_, _,
Stopping the	With the boat on a close reach, ease the sails out as far as possible until one	2/87
boat	stops. (sails will luff).	_, ,
Safety harness	Purpose is to keep a person on board by attaching the person to a strong part of	3/91
Salety Harriess	the boat	3/71
Mild	Feeling cold, violent shivering, slurred speech	3/93
hypothermia	<i>g, a a - p</i>	
Medium	Loss of muscular control, drowsiness, incoherence, stupor and exhaustion	3/93
hypothermia		
Severe	Collapse and unconsciousness, respiratory distress and/or cardiac arrest	3/93
hypothermia	probably leading to death	
HELP	Heat Escape Lessening Position (fetal position that conserves body heat in the	3/94
	water)	
Hypothermia	Remove wet clothing; wrap in blanket or sleeping bag with external heat	3/93
Do's	source; call for medical attention	
Hypothermia	Do not administer fluids unless person is totally coherent; do not massage	3/94
Don'ts	arms or legs; do not administer alcohol, coffee or tea	
Foretriangle	Space between the mast and forestay	3/101
Small craft	One red pennant displayed at day; one red light above a white light at night	4/111
advisory		
Gales warning	Two red pennants displayed at day, one white light over a red light at night	4/111
Storm warning	A single red flag with black center displayed at day; two red lights at night	4/111
Hurricane	Two square red flags with black centers at day; white light between two red	4/111
warning	lights at night	
Soundings	Water depths on charts, measured in fathoms (6 feet = 1 fathom), feet or	4/113
	meters. Charts changing to metric system now	
Nautical mile	1 nautical mile = 1.15 statute miles	4/113
Latitude	Degrees north & south from the equator. One degree = 60 nautical miles. 1/60	4/113
	of 1° latitude (minute) = 1 nautical mile.	
Longitude	Degrees east & west, the measure of the earth's circumference around the	4/113
C	equator	
Latitude scale	Found on the side of nautical charts, divided into tenths	4/113
ATONs	Aids to navigation, such as buoys and beacons that identify the locations of	4/113
	channels where safe passage is assured, warn boaters of dangers and	
	obstructions, and help boaters determine their position	
Red Buoy	Red, right, returning	4/114
CANS	Unlighted green buoy that resembles vertical cylinders	4/114
NUNS	Unlighted red buoy that look like cylinders with a conical top	4/114
Lateral mark	Buoys or beacons that indicate the port or starboard sides of a route to be	4/117
	followed.	
Nonlateral mark	Information and regulatory marks: Open-faced diamond = danger; circle =	4/118

	restrictions; diamond containing a cross = boats are excluded	
Junction Buoy	Indicated where a river or channel splits into two routes	4/114
Ground tackle	Combination of anchor, chain and rode (rope).	4/119
Danforth anchor	All purpose anchor, and it will hold in any bottom soft enough to allow the	4/119
	flukes to dig in. Suited for hard mud, sand or soft clay. It's the choice for the	
	weekend sailor and cruiser.	
Plough anchor	Heavy-duty cruising anchor that digs into harder surfaces that the Danforth	4/119
	can penetrate, also grabs into rocks. It must be heavier than a Danforth to	
	provide the same holding power for the same size boat.	
Rode	The rope line in the ground tackle. When anchoring, let out 4-7 times the amount of rode as depth of water.	4/119
Chain	Connects the anchor to the rode. It will absorb shock from a pitching boat in	4/120
Cham	heavy seas, allowing the anchor to stay dug into the bottom. It also keeps the	7/120
	rode from chafing on the bottom when it passes over jagged coral or rocks.	
Safe Anchorage	Must have (a) shelter; (b) room to swing on the anchor; (c) sufficient depth of	4/121
bare menorage	water; (d) good holding ground (bottom).	7/121
Shelter	Best is in the lee (between the boat & the wind) of an island or shore.	4/121
Bow lines	Secure bow to dock.	4/124
Stern lines	Secure stern to dock	1/121
Spring lines	Used to control fore and aft motion of boat at dock and as an aid in	4/124
opring inics	maneuvering a boat for docking or undocking.	1/121
Nylon	Anchoring and mooring lines.	4/124
Dacron	Sheets, halyards and other running rigging.	4/124
Polyethylene,	Ski tow ropes and dinghy painters.	4/124
polypropylene	Sin to Wilebas und unigny punitors.	., 12
Cotton	Flag halyards and lanyards.	4/124
Self-bailing	Allows the water to run out as it enters, automatically.	5/137
cockpit		
Through-hull	Below water line where water drains out	5/137
fitting		
Sole	Floor of cockpit	5/137
Transom	Flat surface across the stern.	5/137
Pintle	A bolt of metal secured to the rudder and fitting into the gudgeon. It gives	5/137
	swinging support to the rudder.	
Gudgeon	A fitting attached to the hull into which the rudder's pintle's are inserted.	5/137
Rudderpost	A post where a rudder is suspended through a hull.	5/137
Tangs	Strong metal fitting that attach the shrouds, forestay and backstay to the mast	5/139
Turnbuckle	Attaches the shroud and backstay to toggle and allows them to be adjusted to	5/139
	proper tension.	
Chainplate	Stainless steel straps that attach the turnbuckle to the hull	5/139
Stem fitting	Forestay is attached via the stern fitting	5/139
Masthead light	Fixed white light over the fore-and-aft centerline of the vessel attached to the	5/140
-	mast. Visible from ahead to an angle 22.5° abaft the beam on both sides. Also	
	called a bow or steaming light and indicates a boat moving under engine	
	power. Mounted higher than sidelights.	

Sidelights	Red & green lights visible on the port and starboard sides from directly ahead to an angle of 22.5° abaft of beam. For a boat under power, they must be lower than the masthead light. Vessels < 65.5' may have sidelights mounted in one lantern on the centerline and sidelights & stern lights in one lantern at the top of the mast when under sail.	5/140
Stern light	A white light placed as near the stern as possible and visible astern from an angle of 22.5° abaft of beam on either side.	5/140
At anchor	All vessels must have a 360° white light unless anchored in a recognized small craft anchorage.	5/140
Red light	Sidelight on port side – port wine is red	5/141
Green light	Sidelight on starboard side	5/141
White light	Stern light	5/141
Under power	Sidelights, masthead light and sternlight must be shown.	5/141
2 powerboats	Should pass port side to port side (give way to the right).	5/143
approaching		
each other		
2 powerboats	Vessel that has other vessel to its starboard side must keep clear. Slow down	5.143
crossing	& wait or change course and pass astern.	
One boat	The overtaking vessel shall keep out of the way of the vessel being over taken.	5/143
overtaking		
another		
One short blast	You intend to pass port-to-port.	5/143
(Inland)		
Two short blasts (Inland)	You intend to pass starboard-to starboard.	5/143
Three short blasts (Inland)	You are operating in reverse.	5/143
Response-agree	Same signal as above	5/143
Response-	5 or more short blasts – indicated dangerous situation exists.	5/143
disagree		
2 prolonged	Overtaking vessel in a narrow channel or fairway, passing on your port side.	5/143
blasts + 1 short		
blast (Int'l) (·)		
2 prolonged	Overtaking vessel in a narrow channel or fairway, passing on your starboard	5/143
blasts + 2 short	side.	
blasts (··)		
(Int'l)		

1 prolonged blast (-)	Nearing a bend or an area of a channel or fairway where other boats may be obscured or (Inland) a powerboat leaving a dock.	5/143
Inland/Int'l		
1 prolonged blast followed by 2 short blasts	A sailboat without engine running when operating in or near an area of restricted visibility.	5/144
at intervals of		
not more than 2		
minutes		
PFD	Personal flotation Device. Must be carried for each person on board. If boat is ≥ 16', a Type IV must be on board.	5/144
Type I (off-	Must turn unconscious people from face down positions to vertical or nearly	5/144
shore life	face up positions (22 lbs of buoyancy). Recommended for offshore cruising	
jacket)	where a delayed rescue is probable.	
Type II (near-	Will turn some unconscious people from face down to vertical or nearly face-	5/144
shore buoyant	up positions (15.5 lbs buoyancy). Recommended for inshore or inland cruising	
vest)	on calm water – prompt rescue likely.	
Type III	May not turn unconscious persons face-up. Recommended for water skiing,	5/144
(floatation aids)	sailing in small boats, hunting or fishing.	
Type IV	Ring life buoys, buoyant cushions, horseshoe buoys. Use in emergency only.	5/144
(throwable		
device)		
Type V	Boardsailing vests, deck suits, work vests or inflatable hybrid life jackets.	5/145
(special-use		
devices,		
hybrids)		-/
Class A Fire	Ordinary combustible material (paper or wood).	5/145
Class B Fire	Gasoline, oil, grease and other flammable liquids.	5/145
Class C Fire	Electrical	5/145
Water only	Class A fires	5/145
Carbon dioxide	All 3 classes of fires	5/145
B-I Extinguisher		5/145
B-II	15 lbs carbon dioxide, 10 lbs dry chemical	5/145
Extinguisher		- /
Boat < 26'	One B-I	5/145
Boat 26' - < 40'	Two B-I or one B-II	5/145
Boat 40' – 60'	Three B-I or one B-II + one B-I	5/145
Vessel over	Must carry a horn, whistle or bell audible for one mile.	5/147
39.4' but less		
than 65.5'		
Vessels less	Do not need to carry a horn, whistle or bell, but must have means to make	5/147
than 39.4'	efficient signal when necessary.	
Vessels in	Must carry visual distress signals (flares)	5/147
coastal waters		

Safety	Two anchors with no less than 200' rode on each, bailer or manual bilge	5/147
equipment	pump, flashlight and extra batteries, first aid kit, tool kit, navigation charts and	
required	equipment. Other may be soft wood plugs, VHF radio.	
Personal safety	Safety harness	5/149
equipment		- /
Man overboard	Life buoys, buoyant heaving line, inflatable life raft, rigid dinghy, inflatable	5/149
rescue	dinghy, distress flares, daylight distress (smoke) signals, Water resistant light,	
equipment	fog horn, name and sail number	6/1.62
Mainsail and	Main sail power	6/163
mizzens (2 nd sail		
on yawl or ketch Foresails	Uha an aanaaa aat firam baadatay. Canaaa ayamlan maat yihan alaaa baylad	6/162
Foresairs	Jibs or genoas set from headstay. Genoas overlap mast when close-hauled	6/163
Staysails	A small rectangular sail used forward of the mast on a reaching course.	6/163
Spinnakers	A balloon-like sail used on a downward course.	6/163
Low pressure	Bad weather comes from	6/168
*	Bad weather comes from	0/108
system Cirrus clouds	High wispy, hazy thin layers identifying an approaching warm front. Rain to	6/168
Cirus ciouds	follow in less than 24 hours.	& &
	Toriow in 1635 than 24 nours.	6/171
Cirrostratus	With a solar halo; more defined cloud layer. Rain getting closer	6/168
Chrostiatas	With a solar haro, more defined cloud layer. Rain getting closer	&
		6/171
Altostratus	White & gray, full & fluffy formed in round masses	6/168
	· · · · · · · · · · · · · · · · · · ·	&
		6/171
Nimbostratus	Long, ragged clouds, thick and darker bringing rain	6/168
		&
		6/171
Cumulonimbus	Thick and darker with anvil-shaped top, bringing rain and thunderstorms.	6/168
		&
		6/171
Cumulus	Small fluffy clouds. Fair weather sign.	6/168
Cold front	Tends to produce more severe weather than a warm front.	6/168
Thunderstorms	Usually occurs along a cold front.	6/168
Line squall	Low rolling cloud is a sign of approaching line squall – short lived	6/168
Rapid changes	Usually indicates strong winds.	6/169
in barometric		
pressure		(1170
Rise or fall of 8	Followed by gale in 4 to 8 hours	6/170
mb within 3		
hours	In digate had greather	6/170
Lower clouds	Indicate bad weather Wind healts (counterplackwise) with approach of had weather years	6/170
Wind direction	Wind backs (counterclockwise) with approach of bad weather; veers	6/170
	(clockwise) with coming of an improvement.	

Sunsets	Bright yellow = wind; pale yellow = rain; pink = fair weather	6/170
Deteriorating	Falling barometer, feathery cirrus clouds at high altitudes followed by	6/170
weather	cirrostratus, then altostratus, wind veering	
Reef	Reduce area of sail in high winds.	6/173

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