

# Communication at Sea



# *Layout* **COMMUNICATION AT SEA**



**Flags, semaphores, and other systems**

**Inmarsat System**

**International code flags**

**Geosynchronous satellites**

**Morse code**

**The concept of maritime communication**

**VHF**

**Transmission of letters and numbers.**

**Frequency of the radio wave used  
for the maritime communication**

**The figure code**

**Satellite communication**

**SSB**

**Grammar notice - 'if sentences  
and the 'unreal' past**

# VOCABULARY

**Pennant**

**Intermediary**

**Dot**

**Alignment**

**Dash**

**Headquarters**

**Relay**

**Appliance**

**Input**

# VOCABULARY

- **Pennant** (n) - a flag occasionally flown
- **Dot** (n) - a short sound or click
- **Dash** (n) - the mark (- ); a long sound or signal
- **Relay** (v) - receive and pass on (a message, etc.)
- **Intermediary** (n) - a go-between, mediator
- **Alignment** (n) - arrangement in a straight line
- **Headquarters**(n) - the main office
- **Appliance** (n) - a device for performing a specific task
- **Input** (n) - the act of putting in



The  
communication  
*effective*




The  
communication  
*uncompleted*



***The communication***  
***effective*** – communicator  
received the confirmation on  
acceptance of message by  
recipient.

**The communication**  
**uncompleted** - no feedback  
confirming reception of message by  
recipient.

SMC  
P,  
2001

A photograph of a ship's bridge. In the foreground, a man in a light pink shirt is seated at the helm, wearing sunglasses and speaking into a handheld microphone. His hands are on the steering wheel. In the background, another man in an orange shirt is seated at a console, looking out a window. The bridge is equipped with various electronic equipment, including a large monitor and a control panel. A sign above the equipment displays the letters 'N F H L S D S L F L C A'. The scene is brightly lit, suggesting daytime.

*"All wheel orders given should be repeated by the helmsman and the officer of the watch should ensure that they are carried out correctly and immediately"*.

# Structure of the communication





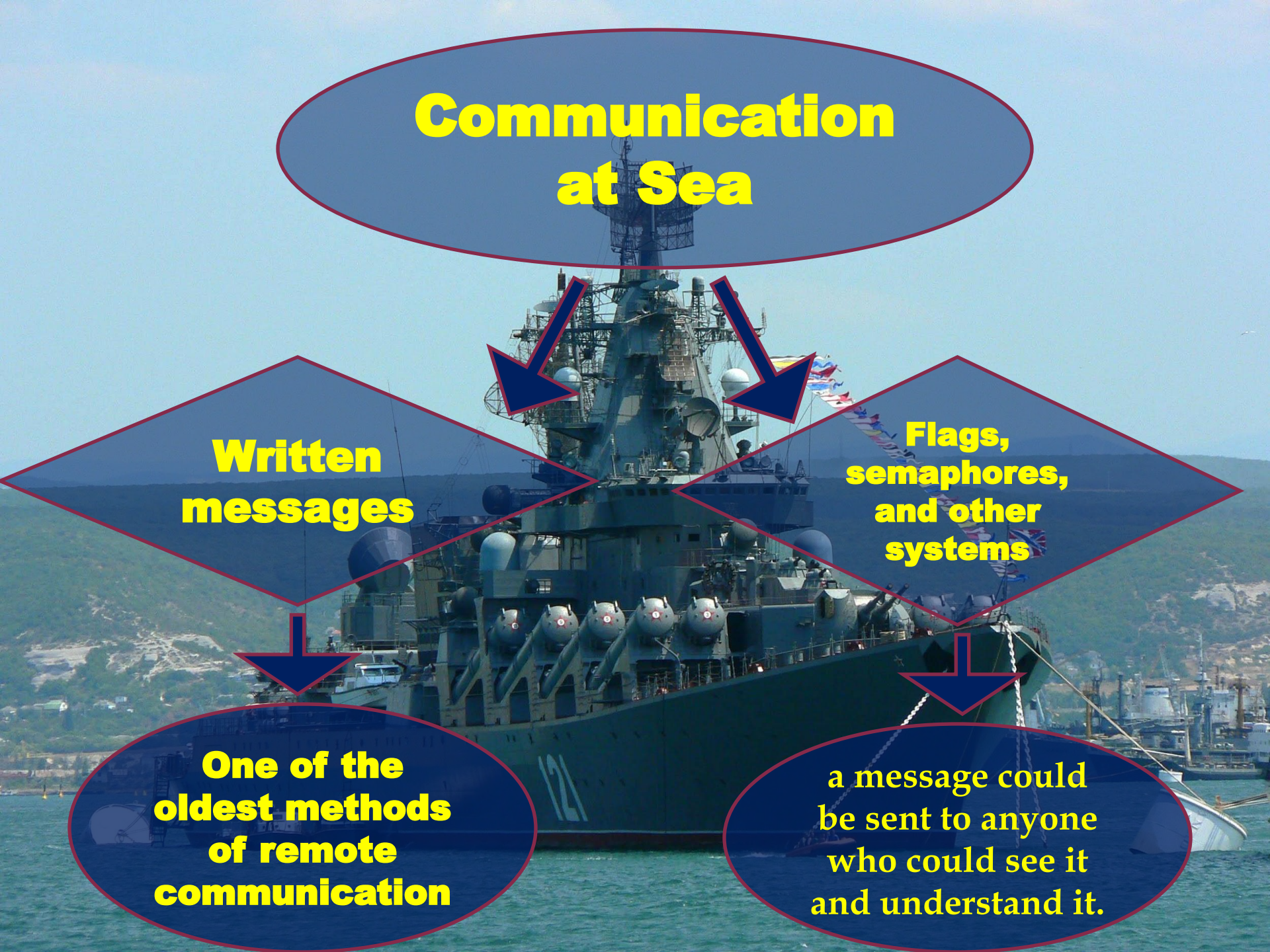
# Communication at Sea

**Written  
messages**



**Flags,  
semaphores,  
and other  
systems**

**One of the  
oldest methods  
of remote  
communication**

a message could  
be sent to anyone  
who could see it  
and understand it.



# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Alfa AL-fah	I have a diver down; keep well clear at slow speed.
	Bravo BRAH-voh	I am taking in, discharging, or carrying dangerous cargo.
	Charlie CHAR-lee	"Yes" or "affirmative". Change of Course (Sailing Regatta)
	Delta DELL-tah	I am maneuvering with difficulty; keep clear.




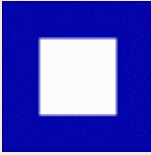
# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Echo ECK-oh	I am directing my course to starboard.
	Foxtrot FOKS-trot	I am disabled; communicate with me. On aircraft carriers: Flight Operations underway
	Golf GOLF	I require a pilot.
	Hotel hoh-TELL	I have a pilot on board.


# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	India IN-dee-ah	I am directing my course to port. (International) Coming alongside. (Navy) Round the Ends Starting Rule (Sailing Regatta)
	Juliet JEW-lee-ett	I am on fire and have dangerous cargo; keep clear.
	Kilo KEY-loh	I wish to communicate with you.
	Lima LEE-mah	You should stop your vessel immediately. Come Within Hail or Follow Me (Sailing Regatta)

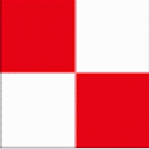

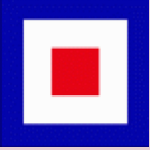
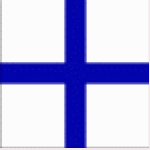
# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	<b>Mike</b> MIKE	My vessel is stopped; making no way. Mark Missing (Sailing Regatta)
	<b>November</b> no-VEM-bur	No or negative. Abandonment and Re-sail (Sailing Regatta)
	<b>Oscar</b> OSS-kur	Man overboard.
	<b>Papa</b> pah-PAH	All personnel return to ship; proceeding to sea (Inport).

# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Quebec kay-BECK	Ship meets health regs; request clearance into port. (International) Boat recall; all boats return to ship. (Navy)
	Romeo ROH-me-oh	None. (International) Preparing to replenish (At sea). Ready duty ship (In port). (Navy)
	Sierra see-AIR-ah	Moving astern. (International) Conducting flag hoist drill. (Navy) Shorten Course(Sailing Regatta)
	Tango TANG-go	Keep clear; engaged in trawling. (International) Do not pass ahead of me. (Navy)

# International Code Flags


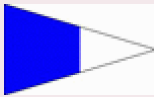

Flag	Name & Phonetic Pronunciation	Meaning
	Uniform YOU-nee-form	You are running into danger.
	Victor VIK-tah	I require assistance.
	Whiskey WISS-kee	I require medical assistance.
	Xray ECKS-ray	Stop carrying out your intentions and watch for my signals. Individual Recall(Sailing Regatta)

# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Yankee YANG-kee	I am dragging anchor. (International) Ship has visual communications duty. (Navy) Wear Life Jackets (Sailing Regatta)
	Zulu ZOO-loo	I require a tug. 20% Scoring Penalty (Sailing Regatta)
	Code/Answer Code or Answer	Message is understood. Also, numeric decimal point. (International) Flag that follows is from the International Code of Signals. (Navy) Postponement (Sailing Regatta)







# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	First substitute (First Repeater) First sub	Substitute for the first flag in this hoist. (International) Also "repeats" the first flag or series of flags in this hoist Absence of flag officer or unit commander (In port). (Navy) General Recall (Sailing Regatta)
	Second substitute Second sub	Substitute for the second flag in this hoist. (International) Absence of chief of staff (In port). (Navy)
	Third substitute Third sub	Substitute for the third flag in this hoist. (International) Absence of commanding officer (In port). (Navy)


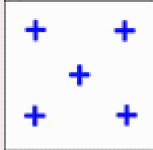


# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	One WUN	None. (International) Numeral one. (Navy)
	Two TOO	None. (International) Numeral two. (Navy)
	Three TREE	None. (International) Numeral three. (Navy)
	Four FOW-er	None. (International) Numeral four. (Navy)

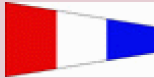

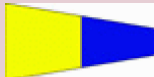

# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Five FIFE	None. (International) Numeral five. (Navy)
	Six SICKS	None. (International) Numeral six. (Navy)
	Seven SEV-en	None. (International) Numeral seven. (Navy)
	Eight ATE	None. (International) Numeral eight. (Navy)





# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Nine NIN-er	None. (International) Numeral nine. (Navy)
	Zero ZEE-roh	None. (International) Numeral zero. (Navy)
	Pennant one PEN-ant WUN	Numeral one. (International) Pennant one. (Navy)
	Pennant two PEN-ant TOO	Numeral two. (International) Pennant two. (Navy)

# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Pennant three PEN-ant TREE	Numeral three. (International) Pennant three. (Navy)
	Pennant four PEN-ant FOW-er	Numeral four. (International) Pennant four. (Navy) Postponement (Sailing Regatta)
	Pennant five PEN-ant FIFE	Numeral five. (International) Pennant five. (Navy)
	Pennant six PEN-ant SICKS	Numeral six. (International) Pennant six. (Navy)

# International Code Flags

Flag	Name & Phonetic Pronunciation	Meaning
	Pennant seven PEN-ant SEV-en	Numeral seven. (International) Pennant eight. (Navy)
	Pennant eight PEN-ant ATE	Numeral eight (International) Pennant eight. (Navy)
	Pennant Nine PEN-ant NIN-er	Numeral nine (International) Pennant nine. (Navy)
	Pennant zero PEN-ant ZEE-roh	Numeral zero (International) Pennant zero. (Navy)

Powerful 150W, 250W  
transceiver:  
1 versions  
flex option

design.

Built-in  
speaker with  
sound.

and easy  
us.

easy to activate  
tton.  
ected against  
nal activation.

Large display, readable from  
wide angles. Red text and  
dimming function ensure that  
night vision is not disturbed.

Tactile rotary knobs for  
volume and squelch.

# VHF

Highly powerful and efficient  
antenna tuner for fast tuning.

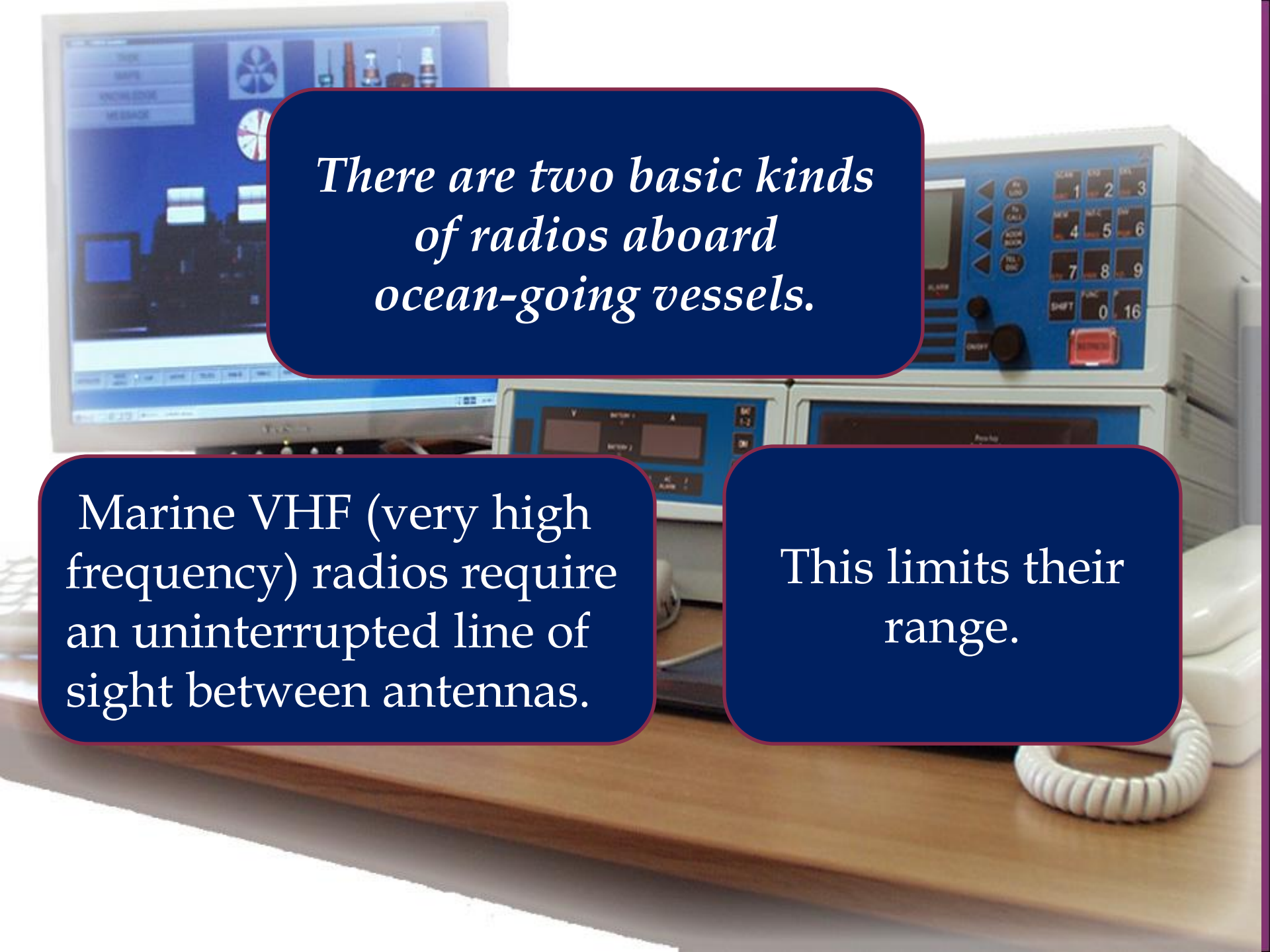
Marine AR anti-reflection f

Large tactile buttons for  
easy operation of the MF/H  
system.

Ergonomic and  
ruggedized handset.

High-quality microphone in  
noise reduction design.





*There are two basic kinds  
of radios aboard  
ocean-going vessels.*

Marine VHF (very high frequency) radios require an uninterrupted line of sight between antennas.

This limits their range.



# SSB



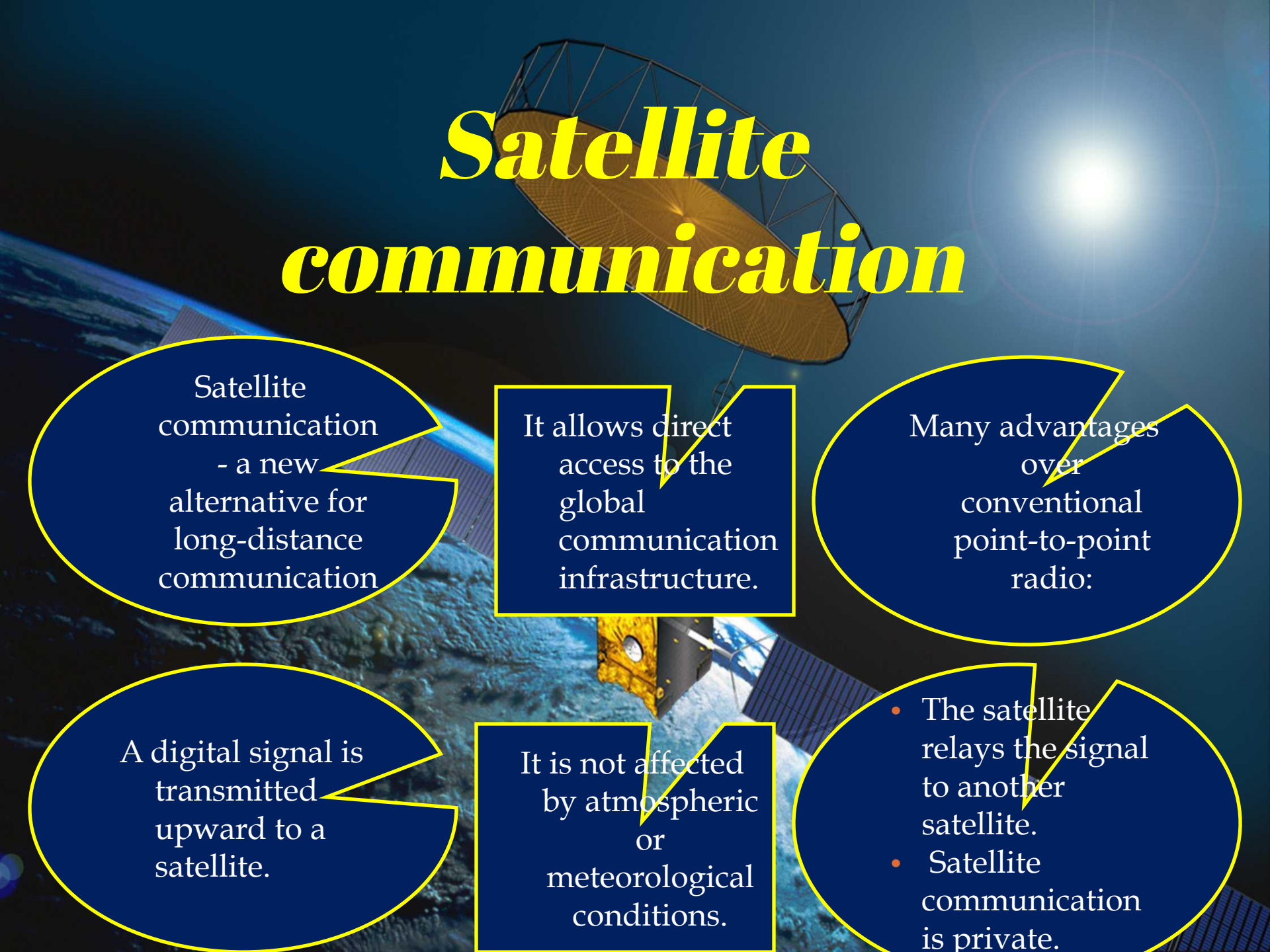
- Marine SSB (single side-band) radio - to communicate over very large distances.
- SSB has a greater range than VHF.
- It does not require a line of sight between stations.
- Transmitting on SSB requires a great deal of electricity .



# *Satellite communication*



# Satellite communication



Satellite communication - a new alternative for long-distance communication

It allows direct access to the global communication infrastructure.

Many advantages over conventional point-to-point radio:

A digital signal is transmitted upward to a satellite.

It is not affected by atmospheric or meteorological conditions.

- The satellite relays the signal to another satellite.
- Satellite communication is private.

## Geosynchronous satellites

A person is sitting at a desk, looking at a laptop. In the background, there is a satellite dish and some other equipment. The scene is dimly lit, suggesting an indoor setting at night or in a dark room.

- Most satellites - in geosynchronous, or geostationary, orbits.
- Each satellite - at an altitude (22,300 miles or so)
- Its speed around the earth matches the earth's rotation.

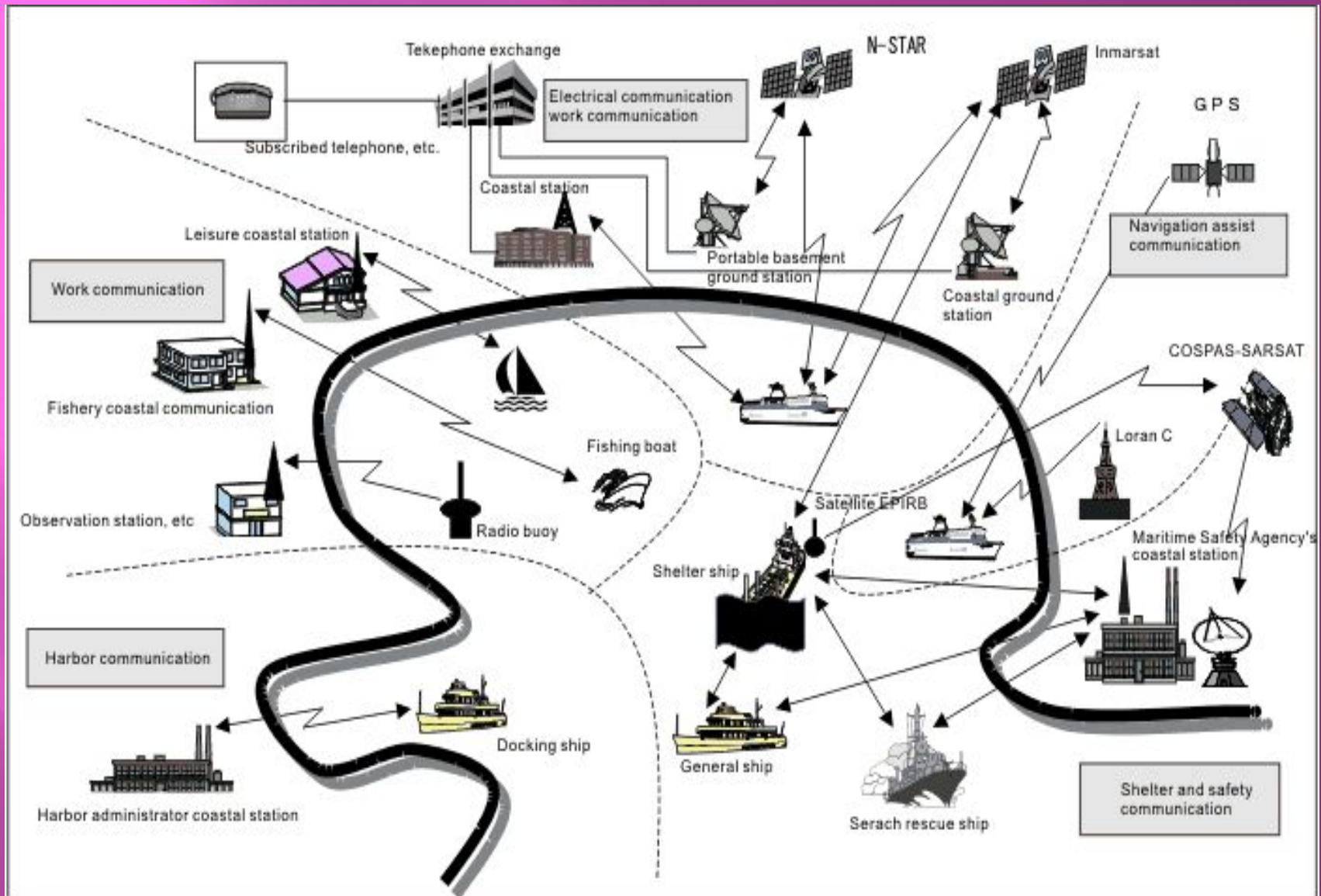
- Both the satellite and the surface of the Earth are rotating around the Earth's axis
- They are rotating at the same rate
- Satellite appears to stay in one place over the Equator.
- This simplifies signal transmission.

# Inmarsat system



- **Inmarsat, or International Maritime Satellite - an international partnership of government and private entities representing 75 countries.**
- **Provide mobile satellite communication services to the world.**
- **Uses four of its own satellites**
- **Leases maritime communication capacity on several other satellites.**
- **All of the units are in geosynchronous orbits.**

# Concept Diagram of Maritime Communications



# Transmission of Letters and Numbers.

Letter	Code	Letter	Code
A	Alfa	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliet	W	Whisky
K	Kilo	X	X-ray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

# The Figure Code

<b>Figure</b>	<b>Code word</b>
<b>0</b>	<b>Nadazero</b>
<b>1</b>	<b>Unaone</b>
<b>2</b>	<b>Bissotwo</b>
<b>3</b>	<b>Terrathree</b>
<b>4</b>	<b>Kartefour</b>
<b>5</b>	<b>Pantafive</b>
<b>6</b>	<b>Soxisix</b>
<b>7</b>	<b>Setteseven</b>
<b>8</b>	<b>Oktoeight</b>
<b>9</b>	<b>Novenine</b>
<b>Full stop</b>	<b>Stop</b>
<b>Decimal point</b>	<b>Decimal</b>



# Questionnaire

1. What is the oldest method of remote communication?
2. How many International Code Flags are there?
3. What is any Morse Code message composed of?
4. What is the meaning of the message composed of three dots + three dashes + three dots?
5. What is the meaning of the abbreviation VHF? What are the disadvantages of VHF communication?
6. What are the two basic kinds of radios aboard ocean-going vessels?
7. What allows direct access to the global communication infrastructure?
8. Is satellite communication affected by atmospheric or meteorological conditions? Why?
9. What simplifies signal transmission to the geostationary satellites?
10. Do you happen to know the altitude of geostationary satellites? How high are they?

# Questionnaire

11. What messages is Channel 16 reserved for?
12. Why should Channel 16 be permanently monitored?
13. May Channel 16 be used for routine messages?
14. When must the phonetic alphabet be used by a seafarer?
15. Do you happen to know the Figure Code? Can you state your year of birth using it?
16. Why are communications at sea so essential nowadays?
17. Between what responders can the communications be effected?
18. Can you name the simplest method of communication? Please, do it!
19. What is the primary condition for successful semafore communication?
20. What does each pennant represent in Flag Communication?

THANKS  
FOR  
YOUR  
ATTENTION

