



CLIL Radiocommunications

GOALS

Acquisition of the language of Aviation
Active involvement of students for topic-related issues
Motivation-Glossary

SKILLS

Development and application of the four language skills (Listening, Speaking, Reading and Writing)

LEVEL

- Elementary
- Intermediate
- Upper-intermediate

TIME

Six hours

MAIN ACTIVITY

Warm up
Presentation
Practice

VOCABULARY

Aviation lexicon
English intermediate
Building up a technical Glossary

LANGUAGE FOCUS

Structural English
Passive form
Simple Present
Describing aeronautical instruments and equipment and their working
Technical language
Creation of a glossary

PREPARATION

Blackboard Computer
Videoprojector

RADIOCOMMUNICATIONS

Radiotelephony provides the means of communication between pilots and ground personnel. The correct understanding of instructions and information transmitted are extremely important to the safety of flight operations.

The use of non-standard radiotelephony procedures or phraseology may cause misunderstanding

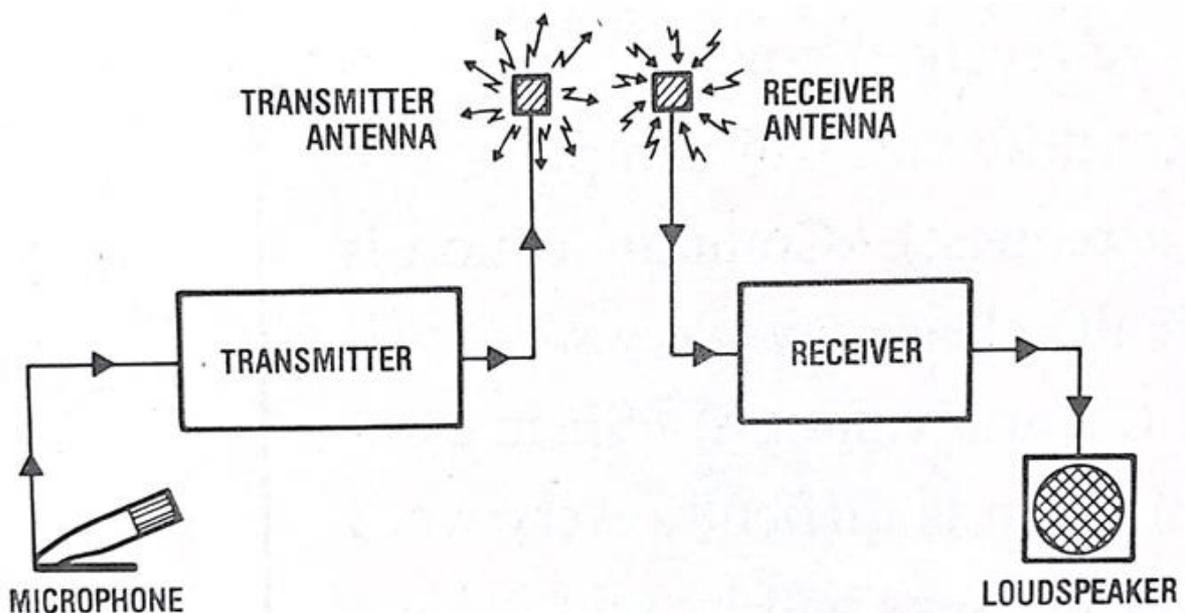
An adequate knowledge of the English language and of the basic technical terms is necessary so that a satisfactory level of communication can be undertaken even in those situations where it is not possible to use standard phraseology.

The contents of this manual are based on the following

ICAO publications: Annex 10 Vol. II Aeronautica)

The aeronautical mobile service, provides the ground-board-ground communications between ground and aircraft stations.

Each ground station has a primary and a secondary frequency allocated to itself



Two-way radiocommunications are nowadays compulsory for most of the flights around the world. Communications must be held either in the language of the ground station or in English. Electromagnetic radio waves travel at the speed of light, and are characterized by their frequency, amplitude, and wavelength.

WARM UP

Match the following expressions with their second part of the phrase:

1. Radiotelephony provides :
2. Standard radiotelephony procedures or phraseology:
3. An adequate knowledge of the English language and of the basic technical terms:
4. Communications between pilots and the ground station:
5. The ground station:

Meanings:

- a. is necessary
- b. the means of communication between pilots and groundpersonnel.
- c. is used to facilitate communications in radiotelephony.
- d. must be held either in English or in the language of ground station.
- e. includes the control tower and the ground personnel.

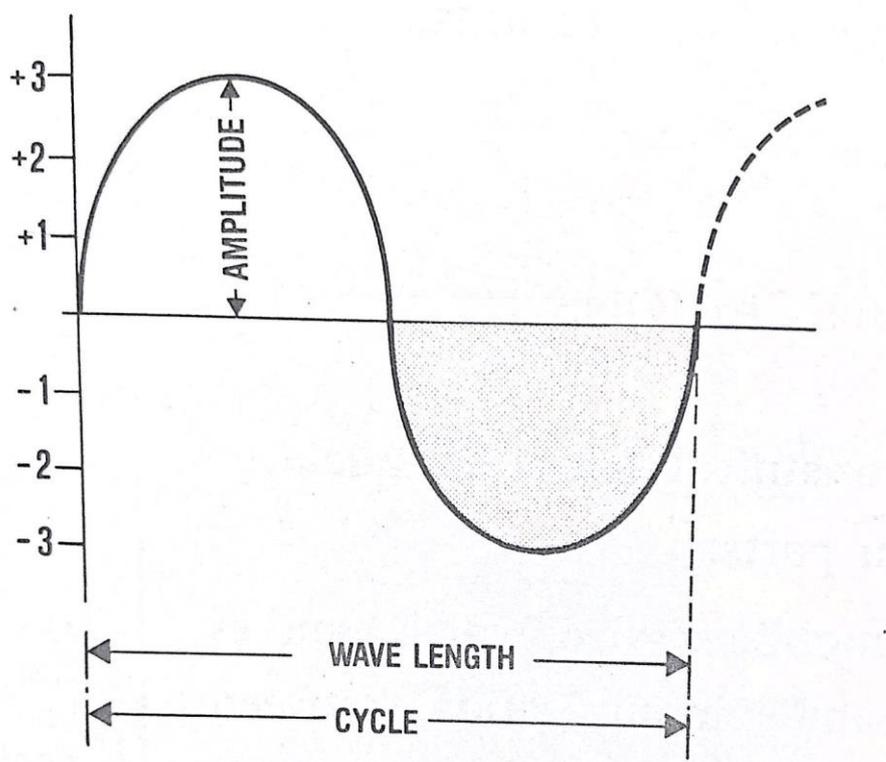
Keys:

1.b – 2.c -3.a -4.d -5.e

<https://learningapps.org/watch?v=pa6s603yt22>

MAIN ACTIVITY

As regards the radio communications between the pilots and the flight controllers, the frequencies of the VHF(**VERY HIGH FREQUENCY**)BAND ARE USED



The **standard phraseology** is used to facilitate communications in radiotelephony. The words whose pronunciation could generate misunderstandings have to be **spelled** using the **phonetic alphabet**.

ICAØ aviazione	
A	ALFA
B	BRAVO
C	CHARLIE
D	DELTA
E	ECHO
F	FOXTROT
G	GOLF
H	HOTEL
I	INDIA
J	JULIETT
K	KILO
L	LIMA
M	MIKE
N	NOVEMBER
O	OSCAR
P	PAPA
Q	QUEBEC
R	ROMEO
S	SIERRA
T	TANGO
U	UNIFORM
V	VICTOR
W	WHISKEY
X	X-RAY
Y	YANKEE
Z	ZULU

Exercise :

International phonetic alphabet

<https://www.youtube.com/watch?v=TXb5zRsicnc>

The following words and phrases should be used where practicable in radiotelephony:

Affirmative «Yes» or «Permission granted».

Break «I hereby indicate the separation between portions of the message».

Correction «An error has been made in this transmission. The correct version is...».

Go ahead «Proceed with your message».

How do you read?

I say again .

Negative «No» Or «Permission not granted»
- «or «That is not correct».

Out «This transmission is ended and no response is expected»

Over «My transmission is ended and I expect a response from you».

Read back «Repeat all of this message back to me».

Roger «I have received all of your last transmission».

Say again

Speak slower

Stand by

That is correct

Wilco «I have received your message, understand it, and will comply».

MAIN ACTIVITIES

Find the right definitions of the following words or phrases:

- | | |
|----------------------------|--|
| 1. Affirmative | a. radio check if the aircraft is about to depart |
| 2. Negative | b. Repeat all the message to me |
| 3. Go ahead | c. I have received all of your last transmission |
| 4. Say again | d. I repeat another time |
| 5. Read back | e. No or permission not granted |
| 6. Wilco | f. Yes or permission granted |
| 7. Roger | g. I have received your message and I will comply |
| 8. Over | h. Proceed with your message |
| 9. Pre-flight check | i. Check if the aircraft is in flight |
| 10. Signal check | l. My transmission ended and I wait a response |

Keys : 1.f-2.e-3.h-4.d-5.b-6.g-7.c-8.l-9.a-10.i

<https://learningapps.org/watch?v=pssaq2er522>

Radio checks must be requested by the following standard phrases:

- **pre-flight check** if the aircraft is about to depart;
- **signal check** if the aircraft is in flight;
- **maintenance check** in any other case.

The possible answers to radio are given using The readability scale:

- **1 = unreadable,**
- **2 = readable now and then,**
- **3 = readable with difficulty,**
- **4 = readable**
- **5 = perfectly readable.**

Main activity

Readability scale

Readability scale

1	A	Perfectly readable
2	B	Readable with difficulty
3	C	Readable now and then
4	D	Readable
5	E	Unreadable

<https://learningapps.org/watch?v=pe8qitag522>

keys

Readability scale

1	Unreadable
2	Readable now and then
3	Readable with difficulty
4	Readable
5	Perfectly readable

The messages handled by the aeronautical mobile service, which consist of a call and of a text, belong one of the following categories:

- distress messages (mayday)
- urgency messages (pan)
- communications relating to direction finding,
- flight safety messages,
- meteorological messages,
- flight regularity messages.

Aircraft are called either by their full call sign or abbreviated call sign,

Examples:

Aircraft call signs	Transmitted as
CCA 238	Air China two three eight
AFR 46QD	Air FRANCE 46 QUEBEC DELTA
I-MIMI	INDIA-MIKE INDIA
N2654C	NOVEMBER 54CHARLIE
F-LOVE	FOXTROT-VICTOR ECO
ASL 74Q	IR SERBIA74 QUEBEC

ATS ground stations are called by one of the following call signs, indicative of the service they provide:

- **radio** = Flight Service Station,
- **tower** = Aerodrome Control Tower,
- **approach** = Approach Control Unit,
- **control** = Area Control Center,
- **information** = Flight Information Center
- **homer** = Direction-Finding Station,
- **radar** = Radar Unit.

The following are other standard phrases used by ground or aircraft stations in particular occurrences:

- station calling ...,
- say again callsign;
- transmission blind due to receiver failure;
- to all stations;

Transmission of numbers in radiotelephony

All numbers, except as prescribed below, shall be transmitted by pronouncing each digit separately.

Examples:

Aircraft call signs Transmitted as

CCA 238 Air China two three eight

Flight levels Transmitted as

FL 180 flight level one eight zero

Headings Transmitted as

100 degrees heading one zero zero

Wind direction and speed Transmitted as

200 degrees 70 knots wind two zero zero degrees seven zero knots

Runway Transmitted as

27 Runway two seven

Altimeter setting Transmitted as

1 010QNH one zero one zero

Altitude Transmitted as

800 eight hundred

3 400 three thousand four hundred

12 000 one two thousand

Cloud height Transmitted as

2 200 two thousand two hundred

Visibility Transmitted as

1 000 visibility one thousand

700 visibility seven hundred

Numbers containing a decimal point shall be transmitted using the decimal point in appropriate sequence being indicated by the word DECIMAL.

Examples:

Number Transmission as

100.3 one zero zero decimal three

118.0 one one eight decimal zero

118.150 one one eight decimal one five

Transmit the time

Examples:

TimeStatement

0920 (9:20 A.M.)ZE-RO NIN-er TOO ZE-RO

1643 (4:43 P.M.)WUN SIX FOW-er TREE

Numbers shall be transmitted using the following pronunciation:

Number Pronunciation

0 ZE - RO

1 WUN

2 TOO

3 TREE

4 FOW-er

5 FIFE

6 SIX

7 SEV-en

8 AIT

9 NIN-er

Decimal DAY-SEE-MAL

Hundred HUN-dred

Thousand TOU-SAND

FOLLOW UP

Numbers in radiotelephony

Fl 180	visibility seven hundred
100 degrees	Visibility one thousand
200 degrees 70 knots	Wind two zero zero degrees seven zero zero knots
27	QNH one zero one zero
1010	Runway two seven
Altitude 800	Two thousand two hundred
3400	Three thousand three hundred
12000	One two thousand
Cloud height 2200	Eight hundred
Visibility 1000	heading one zero zero
700	Flight level eight one zero

<https://learningapps.org/display?v=pn93kneyj22>

keys

Numbers in radiotelephony

Fl 180	Flight level eight one zero
100 degrees	Heading one zero zero
200 degrees 70 knots	Wind two zero zero degrees seven zero zero knots
27	Runway two seven
1010	QNH one zero one zero
Altitude 800	Eight hundred
3400	Three thousand three hundred
12000	One two thousand
Cloud height 2200	Two thousand two hundred
Visibility 1000	Visibility one thousand
700	Visibility seven hundred

List of Words

Radio Communications
Phraseology
Ground Personnel
Ground Station

Transmitter Antenna
Transmitter
Receiver
Radiowaves
Receiver antenna
Microphone
Loudspeaker
Speed
Radiotelephony
Frequency
Amplitude
Wavelength
Affirmative
Break
Negative
Radio checks
Readable
Mayday
Call sign
Flight level
Headings
Wind direction
Runway
Cloud height
Visibility
Altitude
Preflight check
Signal check
Maintenance check
Aircraft station
Decimal

Teachers :
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