



# 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**

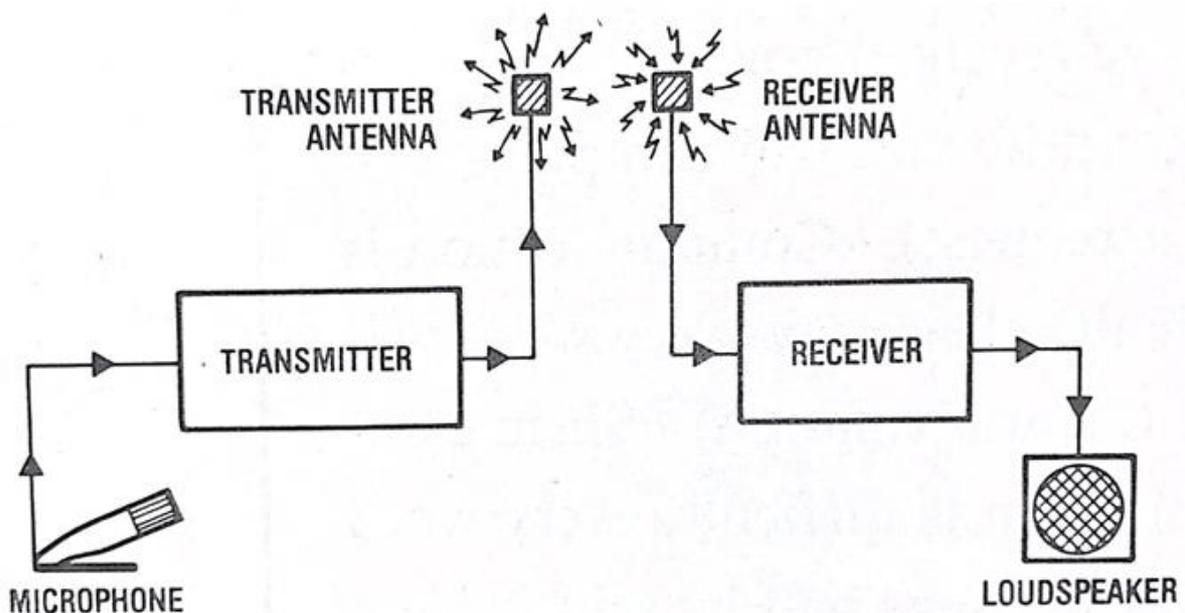
An adequate knowledge of the English language and of the basic technical terms is necessary so that a satisfactory level of communication can be undertaken even in those situations where it is not possible to use standard phraseology.

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.

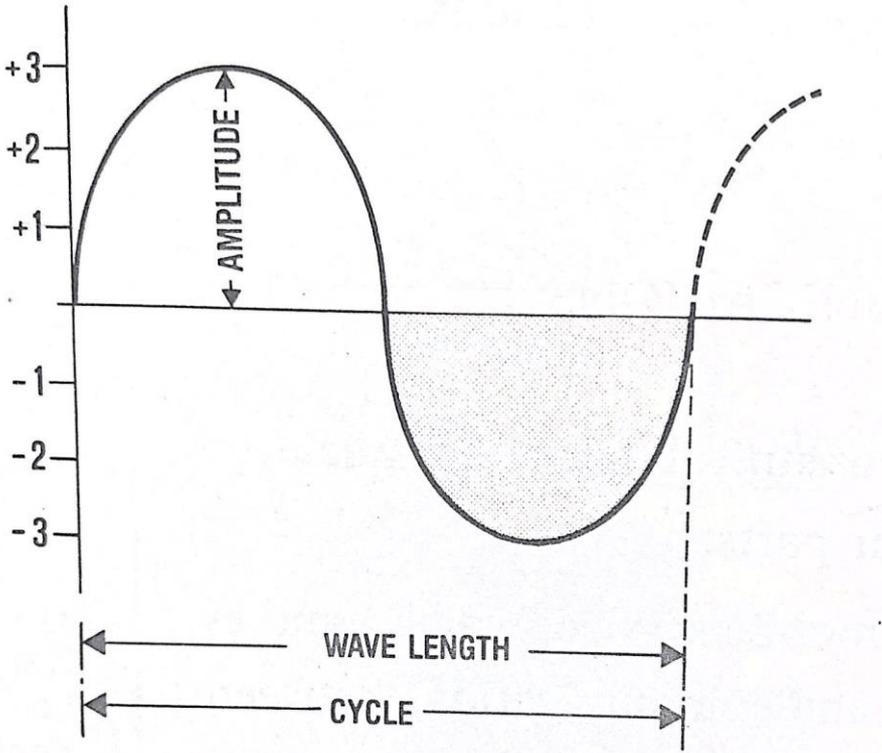
Keys:

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**.

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

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:

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

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## 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:

<b>Aircraft call signs</b>	<b>Transmitted as</b>
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 call sign;
- 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

1 010 QNH 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:

**Time Statement**

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

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## **FOLLOW UP**

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### **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

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