


TEACHING RADIOTELEPHONY

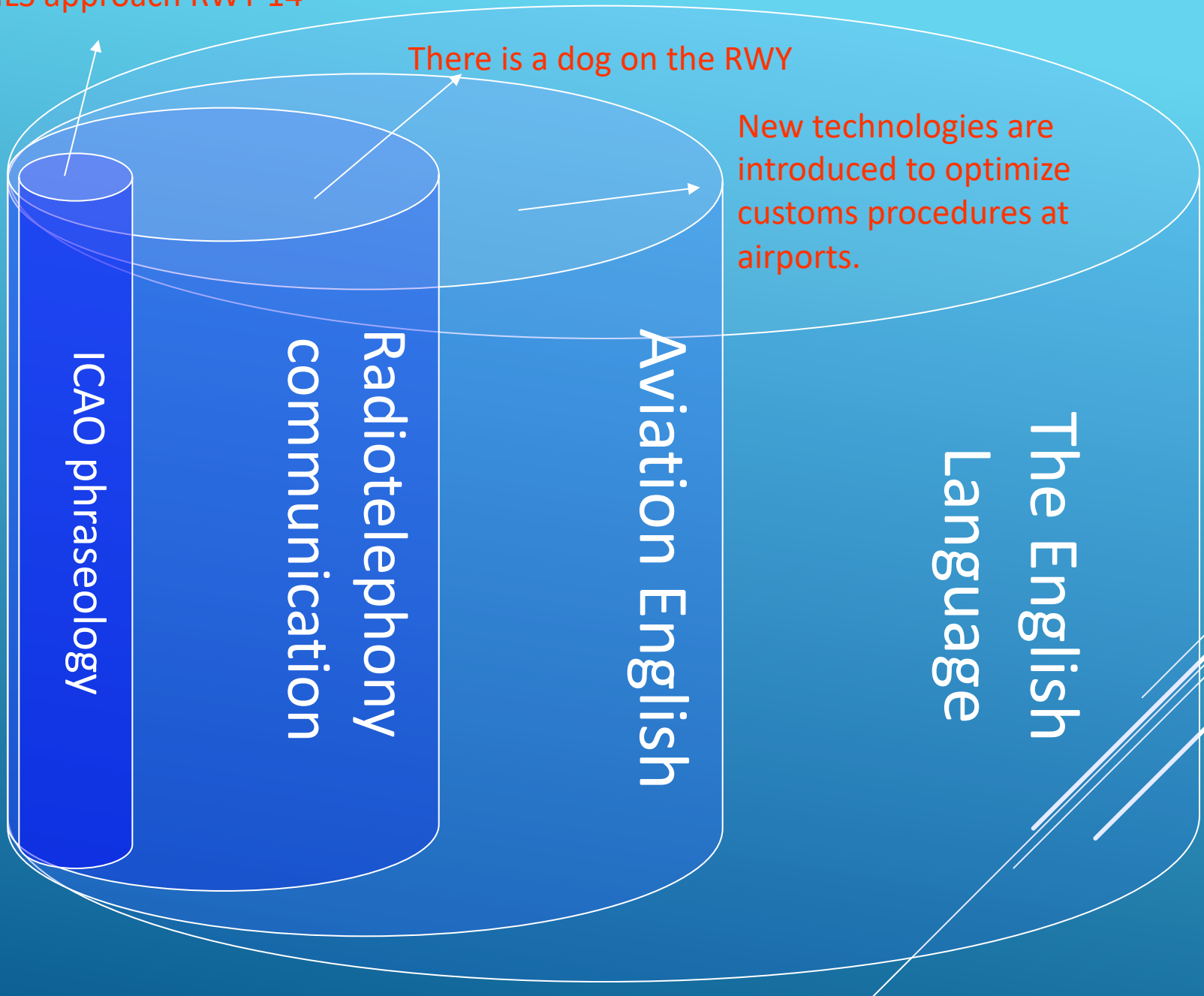


BEFORE WE START


LET'S PUT SOME QUESTIONS FORWARD

- ➡ What is the share of Standard Phraseology?
 - ➡ What is Standard Phraseology?
 - ➡ How much does Standard Phraseology weigh (in ICAO levels)?
 - ➡ How do pilots feel about Standard Phraseology?
 - ➡ How do teachers feel about Standard Phraseology?
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Cleared ILS approach RWY 14



WHAT IS STANDARD PHRASEOLOGY?

- ➡ A minimum set of lexical and grammatical means used for radio telephony communication
 - ➡ In **ALL SITUATIONS** for which standard radiotelephony phraseology is specified it **SHALL** be used (Annex 10, Chapter 5)
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HOW MUCH DOES STANDARD PHRASEOLOGY WEIGH (IN ICAO LEVELS)?

| Structure | Vocabulary | Comprehension | Interactions |
|--|--|--|--|
| Shows only limited control of a few memorized grammatical structures | Limited vocabulary range consisting only of isolated words and memorized phrases | Comprehension is limited to isolated memorized phrases | Interaction is limited to simple routine exchanges |

- ➡ Knowledge of Standard Phraseology **ONLY** corresponds to **level II** of ICAO Language Proficiency Rating Scale

PRE-EMINENT R/T COMMUNICATION PROBLEMS:

- ➡ frequency congestion
 - ➡ poor microphone technique
 - ➡ ambiguity
 - ➡ phonetic similarity
 - ➡ incomplete call-signs
 - ➡ confused sequence of numbers in messages
 - ➡ strings of instructions
 - ➡ inadequate acknowledgements
 - ➡ readback errors
 - ➡ hearback errors
- 

HOW DO PILOTS FEEL ABOUT STANDARD PHRASEOLOGY?

- ➡ Enthusiastic?
- ➡ Confident?
- ➡ Frivolous?
- ➡ Your observations?
- ➡ Does it depend on their level of English?

Complete the sentence:

*The higher (lower) the level the more (less)
about Standard phraseology pilots are.*

HOW DO TEACHERS FEEL ABOUT STANDARD PHRASEOLOGY?

- ➡ Enthusiastic?
 - ➡ Confident?
 - ➡ Frivolous?
 - ➡ Your experience? Theoretical? Practical? Flight?
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- A series of four parallel white diagonal lines in the bottom right corner of the slide, slanting upwards from left to right.

AND SOME MORE QUESTIONS ...

- ➡ What are the regulatory documents to specify the usage of Standard Phraseology?
- ➡ What are the manuals and publications to use for teaching Standard Phraseology?
- ➡ What are the methods of teaching standard phrases?
- ➡ What is special about teaching such RT issues as
 - ↳ Numbers
 - ↳ RT alphabet
 - ↳ ATIS information
 - ↳ ATC clearance
 - ↳ Non-routines and emergencies
- ➡ How to manage Non-standards?

ICAO Docs and Publications on Radiotelephony

- ➡ Annex 10, Volume II Aeronautical telecommunications
- ➡ Doc 4444 PANS-ATM
- ➡ Annex 3 Meteorological services for International Air Navigation
- ➡ Doc 7030 Regional Supplementary Procedures
- ➡ Doc 9377 Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services
- ➡ Doc 9432 Manual of Radiotelephony
- ➡ Doc 9835 Manual on the Implementation of ICAO Language Proficiency Requirements

HOW DO WE FINISH THE COURSE?

The same test of ICAO phraseology

➡ Duration 15 min

➡ Purpose:

- ↳ To assess gaps in knowledge

- ↳ To make sure pilots have learned the amendments to the ICAO Documents and have studied RT manuals

HERE IS THE EXAMPLE..(1)

► Task 1. Write down the ICAO standards for the following

| Meaning | ICAO standard word or phrase |
|---|------------------------------|
| 1. Let me know that you have received and understood this message | 1. _____ |
| 2. I should like to know...; I wish to obtain... | 2. _____ |
| 3. I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment | 3. _____ |

► Task 2. Complete standard phrases

1. taxi to holding point RWY 07 via TWY 7. Hold _____ of RWY 33.
2. RWY 03, cleared for take off, report _____.

HERE IS THE EXAMPLE..(2)

► *Task 3. Correct the following phases according to standards*

- Ь Decrease speed to 1000 ft/min.
- Ь Taxi to holding position RWY 27R.
- Ь Maintain RW heading

► *Task 4. Cross odd one out*

Cleared to start up
to land
for take-off
ILS Approach

► *Task 5. Use ICAO standard phrases to translate the following information*

- Ь Буксировка разрешена, запуск по команде
- Ь Выполнить не могу, рекомендация ТиКАС по разрешению угрозы столкновения
- Ь Прошу подробные инструкции по рулению

RT OUTLINE THROUGH THE COURSE

- ➡ Test of ICAO phraseology
- ➡ ICAO Document acquisition
- Revision of numbers and letters in RT (for ab-initio or elementary pilots only)
- ➡ Revision of weather words. ATIS information
- ➡ Revision of typical routine exchanges and phraseology practice at all standard procedures (based on “Airspeak” F. Robertson)
 - ↳ ATC clearance
 - ↳ Start-up
 - ↳ Push-back
 - ↳ Taxi
 - ↳ Line-up
 - ↳ Take-off
 - ↳ Climb
 - ↳ En route. Position reports
 - ↳ En route traffic information
 - ↳ Descent
 - ↳ Approach
 - ↳ Landing
 - ↳ After landing
- ➡ Revision of non-routines and emergencies
- ➡ Simulator training (briefing, flight, debriefing)
- ➡ Test of ICAO phraseology
- ➡ Simulator exam

THROUGHOUT THE COURSE

(1)

Listening to **LIVE EXCHANGES** recorded throughout the world

- ➡ To adjust pilot's ear to different accents
- ➡ To compare standards with non-standards
- ➡ To analyze ambiguity and risks
- ➡ To manage non-standards (checking, confirming, clarifying)
- ➡ To prepare for the exam listening tasks

Example: listen and reply to the controller



THROUGHOUT THE COURSE

(2)

➡ Some more examples:

Listen to the dialogue between the controller and the pilots and answer the questions:



1/ What is the active RWY?

2/ How many aircraft are ready for departure?

3/ Which aircraft is the first to line up Cathay270 or KLM439?



ATC CLEARANCE. LESSON PLANNING(1)

➡ **Lead-in.** Listen to the recording. At what phase of flight is the aircraft?



➡ **Presentation.**

- ↳ Study a typical “ATC clearance” exchange chart between a pilot and a controller. What are the rules? (requesting, confirming)
- ↳ Read the dialogue? Compare it to the typical exchange chart. Correct mistakes if any.

➡ **Practice.**

- 1) Listen to the ATC clearance. Compare it with the typical sequence. Tick what is different. Add what is missing. Then listen again and copy the digits.

name of ground station

“clears” aircraft callsign

to _____(destination)

(“via flight planned route”)

standard departure

(additional details)

level instructions

frequency to contact after departure

squawk number






ATC CLEARANCE. LESSON PLANNING(2)

Listen to the ATC clearances for the following aircraft. Copy them and read them back. You will hear the original readback after you speak.

| Callsign | ATC details |
|------------------|---|
| 5269 |  |
| KLM 1811 |  |
| Air Portugal 653 |  |

- 3) Listen to the ATC clearance. Compare it with the typical sequence. Tick what is different. Add what is missing. Then listen again and copy the digits.
- 4) Listen to the ATC clearances for the following aircraft. Copy them and read them back. You will hear the original readback after you speak.

| Callsign | ATC details |
|---------------------|---|
| Speedbird 176 heavy |  |
| Pakistan 712 heavy |  |
| 653 DK |  |

TYPICAL ROUTINE EXCHANGES (1)

Used for All Standard Operational procedures

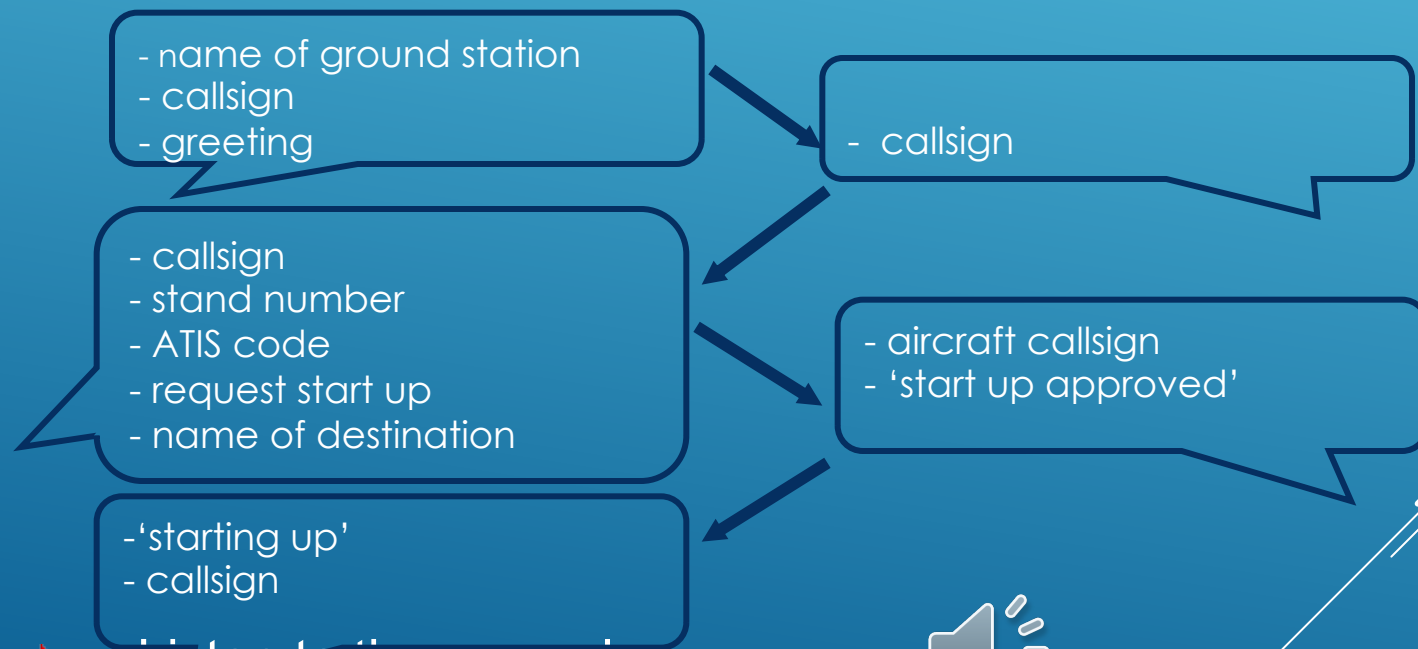
- ➡ Departure information
- ➡ Route clearance
- ➡ Start-up
- ➡ Push-back
- ➡ Taxi
- ➡ Line-up
- ➡ Take-off
- ➡ Climb
- ➡ En route. Position reports
- ➡ En route traffic information
- ➡ Descent
- ➡ Approach
- ➡ Landing
- ➡ After landing

TYPICAL ROUTINE EXCHANGES (2)

For example **START-UP**

➡ Typical words and phrases. Checking if all of them are understood
E.g. stand / gate number, standby, callsign, slot time, expect, at your discretion

➡ Typical pilot-controller exchange



➡ Listen to the example



NON-ROUTINES AND EMERGENCIES.

LESSON PLANNING(1)

- ➡ **Lead-in.** Video fragment (Fire in the galley). Which definition does it correspond to? Identifying terms. Matching the definitions to the terms Urgency or Distress.
 - ↳ A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance
 - ↳ A condition concerning the safety of an aircraft or other vehicle or of some person on board or within sight, but which doesn't require immediate assistance.
- ➡ **Presentation (classification, radiotelephony signals, squawks).**

Classifying incidents into Distress or Urgency.

- ↳ Total electrical failure
- ↳ Depressurization
- ↳ Engine flameout, etc,

Identifying radio signals:

- ↳ A radiotelephony distress signal consisting of the spoken word _____ mean that grave or imminent danger threatens and immediate assistance is required
- ↳ A radiotelephony urgency signal consisting of the spoken words _____ mean, that an aircraft has a very urgent message to transmit concerning safety of a ship, aircraft or other vehicles, or of some person on board or within sight.

Identifying squawks. Correct mistakes:

- ↳ The pilot of an aircraft encountering a state of emergency shall set the transponder to Mode A Code 7600 expect when previously directed by ATC to operate the transponder on a specified code.
- ↳ The pilot of an aircraft losing two-way communications shall set the transponder to Mode A Code 7500.
- ↳ The pilot of an aircraft subjected to unlawful interference shall endeavor to set the transponder Mode A Code 7700 to give indication of the situation unless circumstances warrant the use of Code 7500.

NON-ROUTINES AND EMERGENCIES. LESSON PLANNING(2)

➡ Practice.

Vocabulary practice

- ↳ Completing the phrases
- ↳ Matching the words in two columns
- ↳ Inserting prepositions
- ↳ Thinking of possible actions to take

Listening practice

- ↳ Identifying emergency message format. Listen to the examples and complete the Jeppesen bulletin
- ↳ Listening and taking notes. Identifying differences from a format.

Speaking practice

- ↳ Describing non-routines and emergencies according to the models.
- ↳ Role-play. What will you say to the controller if...

SIMULATOR TRAINING. LESSON PLANNING

➡ Flight preparation

- ↳ Flight legend
- ↳ Computer flight plan
- ↳ Meteorological information
- ↳ Aeronautical charts
- ↳ NOTAMs

➡ Briefing checklist

➡ Flight

- ↳ Phases: start-up, push-back, taxiing, line up, take off, climb, cruise, descent, approach, landing, taxiing, parking
- ↳ Nature: routine / non-routine / emergency E.g. ignition system failure, windshield fogging, bird strike, flap control system failure, etc
- ↳ Involvement:
 - inside the cockpit – CRM, communicating to the controller
 - outside the cockpit – monitoring radio contact, taking notes
- ↳ Equipment: cockpit, computer, flight visualization program

➡ Debriefing

- ↳ Outside analysis
- ↳ Instructor's analysis
- ↳ Correcting mistakes

ANY QUESTIONS?



THANK YOU!

