Language Proficiency Problems in SAR

ICAO GLOBAL SAR FORUM
Abu Dhabi 2010

# ICAO Safety Status Report

ICAO Global Level of Safety

The Global Aviation Safety Plan (GASP) includes three safety targets to be achieved by 2011:

1. Reduce the number of fatal accidents and related fatalities worldwide

2. Achieve significant reductions in the global accident rate

3. Ensure that no ICAO region has an accident rate more than double the world average

Safety Target 1
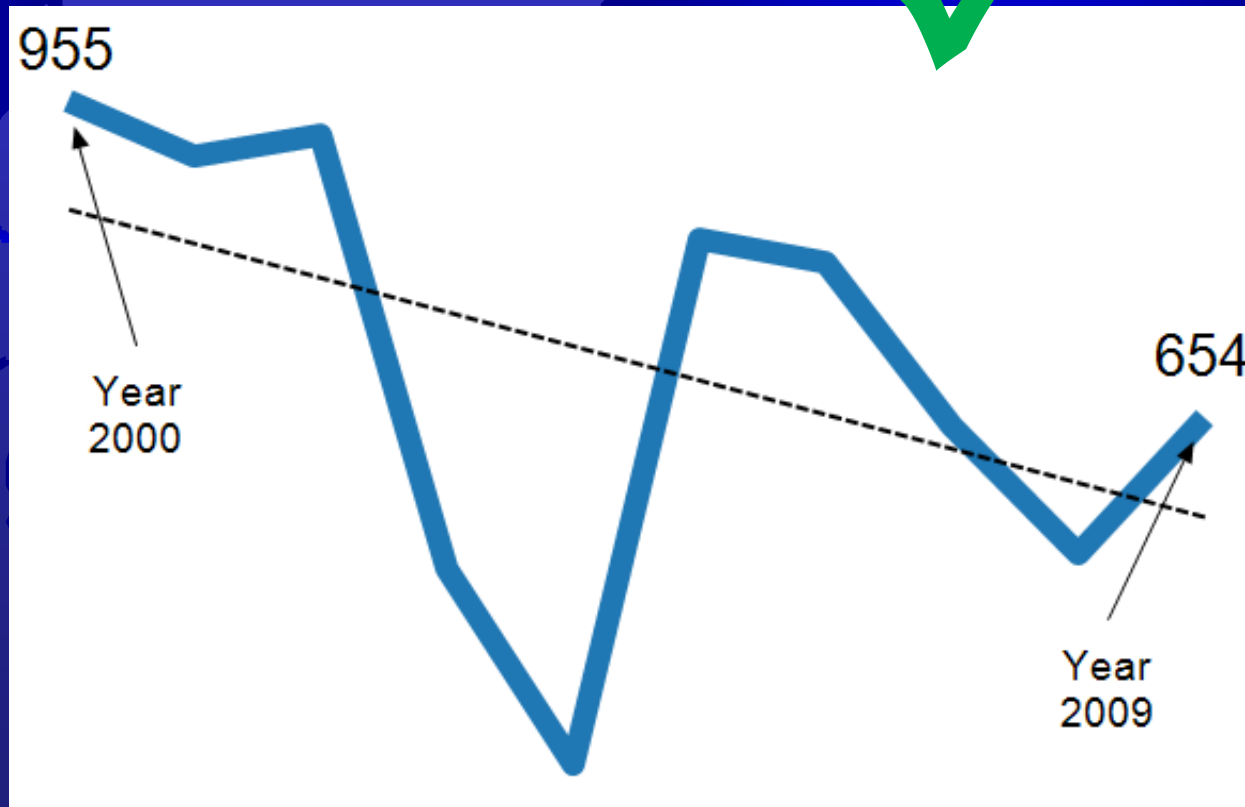# Reduce the number of fatal accidents

Fatal accidents
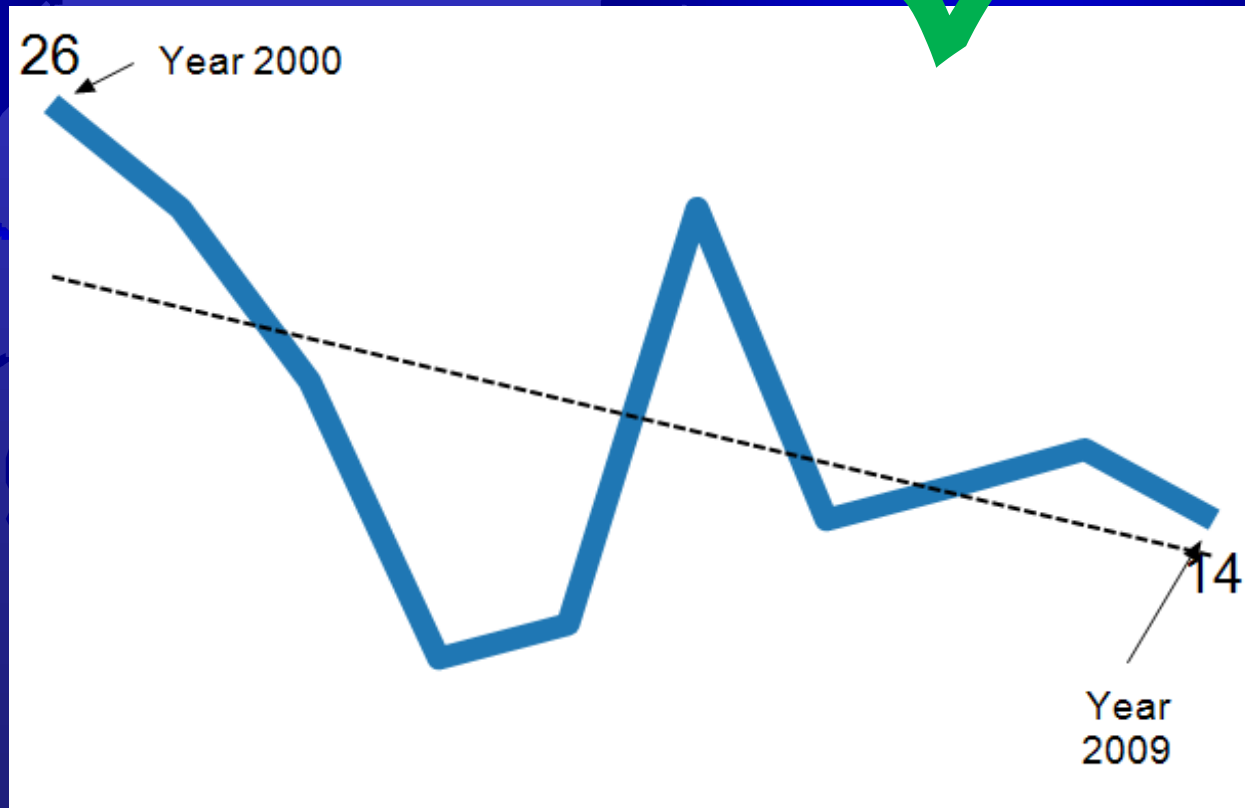
All accidents 2250 kg and above
Source: ADREP

Safety Target 1
Reduce the number of fatalities

Fatalities

955

Year 2000

654

Year 2009

All accidents 2250 kg and above
Source: ADREP

Communication is critical

How critical?

"The most vulnerable link in our … airspace system is information transfer between air traffic controllers and pilots. A review of 28,000 safety reports revealed that over 70% of the problems cited were in information transfer...(House, 1998)

RESOLUTION by Assembly of ICAO, 1998

"…called on ICAO to develop provisions whereby States would be obliged to take steps to ensure that air traffic controllers and flight crews involved in flight operations in airspace where the use of the English language is required, are proficient in conducting and comprehending radiotelephony communications in the English language"

ICAO Study Group confirmed that:

- The universal availability of at least one medium of radiotelephone communication is important for safety and efficiency in international air navigation;
- The lack of a language common to the aircrew and the ground station could lead to an accident;
- There is a need to retain the language used by the station on the ground.

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ATC/pilot "prescriptive" Standard LPR

Level	Pronunc-iation *Assumes a dialect and/or accent intelligible to the aeronautical community.*	Structure *Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.*	Vocabulary	Fluency	Comprehension	Interaction
Expert 6	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational Level	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected ...	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work related topics. Can often paraphrase successfully when lacking vocabulary ...	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent ...	Comprehension is mostly accurate on common, concrete, and work related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication ...	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent ...

ICAO documentation of language requirements for SAR

Annex 12, Chapter 2, ORGANIZATION

2.3.3   Each rescue coordination centre and, as appropriate, rescue sub-centre, shall be staffed 24 hours a day by trained personnel proficient in the use of the language used for radiotelephony communications.

2.3.4   Recommendation — *RCC personnel involved in the conduct of radiotelephony communications should be proficient in the use of the English language.*

Who is involved in the SAR communication process?

- **Parties concerned: RCC operatives using R/T; RCC operatives coordinating between RCCs; ATC; pilots – marine craft, too, but outside our mandate.**

- Can Annex 12 provisions be reinforced by all parties accepting more responsibility: Standard setting organizations (ICAO), SAR Providers, SAR Regulators, SAR training facilities, SAR pilots?

- How can the provisions be supported by best practices in communication?

A fundamental of SAR language policy

- **Responsibility should not be imposed on operatives alone but be vested in service providers and other industry parties to ensure that SAR staff meet proficiency requirements.**

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Which common language?

☞ *Sensitive question! "Man is a fragile animal and needs his close attachments",* none more than his own language – identity, expression, personality!
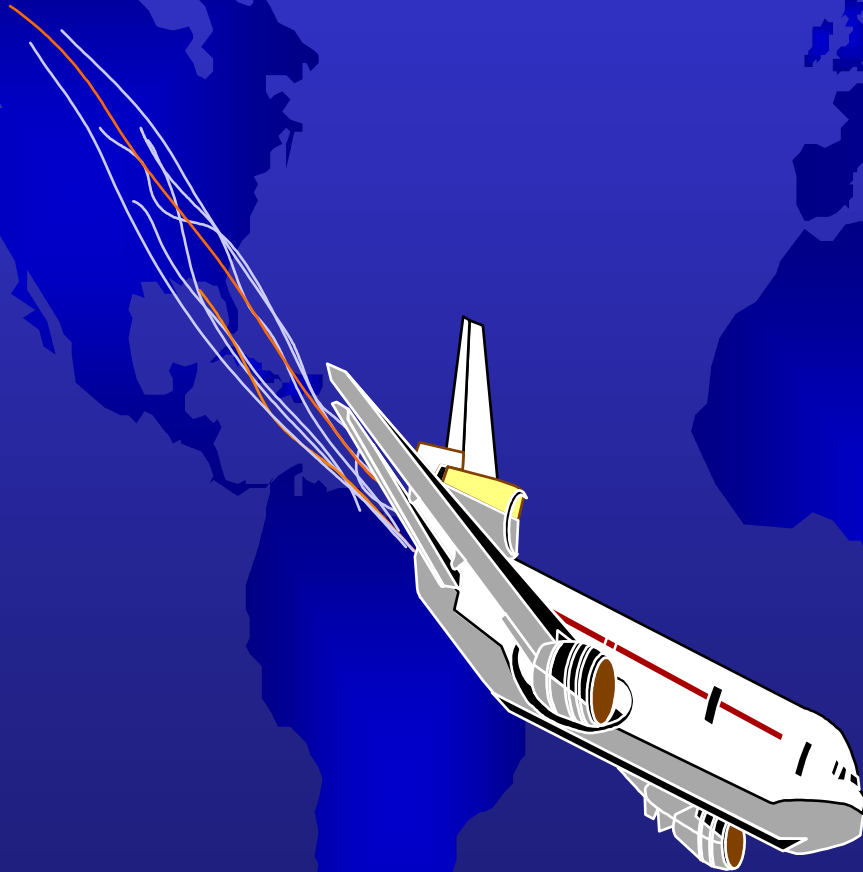
English for aviation

☞ **does not** *belong* **to a culture**;

☞ **has no special inherent qualities**;

☞ **is a tool,** *used* **by controllers & pilots as a matter of convenience**;

☞ **Is the most accessible of all second languages.**

Is standardized phraseology enough?

Standardized phraseology is insufficient to deal with the full range of situations requiring operational exchange of information.

It is vital in all operational communication that …

…we become aware of the idiosyncrasies of language, its insufficiencies and how they can set up dangerous operational situations.

We need to know how

that risk can be mitigated by:

• being regulated;

• being informed;

• being careful, and

• being disciplined.

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Word meanings are a product of mind!

" Customers who find our waiters rude ought to see the manager!"

WAR of the SENSES

Spoken language impacts on our senses but our senses can betray us.

The power of EXPECTATION can override the significance of the received message. We often "hear" what we expect to hear, not what is said.

This risk is increased if one party is communicating in other than their native language, and greatly increased if both parties are doing so!

SAR1

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Pre-eminent R/T communication problems:

- frequency congestion,
- poor microphone technique,
- ambiguity,
- phonetic similarity,
- incomplete callsigns,
- confused sequence of numbers in messages,

- strings of instructions,
- truncated phraseologies,
- inadequate acknowledgements,
- readback errors,
- hearback errors.

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more on the SPIRIT necessary for compliance …

ATTITUDE

Detractors:

apathy, fatigue, chronic dissatisfaction, anger, distractions all detract.

Facilitators:

Cooperation, being non-judgmental, non-intimidating, keeping anger in check facilitate understanding

How compliant are pilots and controllers?

"In spite of the efforts made to achieve compliance with agreed international standard procedures, **violations are commonplace.** It is probably the case that **the gap between theory and practice is wider in communication procedures than in any other facet of aviation"** (Wiener and Nagel).

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The ideal solution

A comprehensive SAR language strategy would require:

1. A closely mandated level of common language proficiency - impractical for SAR,

2. An understanding of the shortcomings of language – achievable in measure, and

3. Observation of the highest standards of discipline in its use – achievable in measure.

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ATC/pilot ICAO "performance" Standard

"In all communications, the highest standard of discipline shall be observed at all times."

Embraces some mechanical aspects of communication:
- Speed of delivery;
- Tone of voice;
- Intonation;
- Length of message.

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ATC/pilot ICAO Standard

"In all communications, the highest standard of discipline shall be observed at all times."

Also addresses the "spirit" or attitudinal aspects of communication:

- ↖ **Sweepingly significant & profoundly important!**
- ↖ **combats carelessness and encourages fundamental technique.**

This type of provision looks good for SAR!

Enlightened high level management can greatly assist good communication

- Awareness of relevant fundamentals of linguistics,
- Awareness of fundamentals of communication, and
- their importance to safe operations.

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- Tailored staff programs:
  - communication training,
  - Scheduling;
  - duty times;
  - recurrency training;
  - human factors

A SAR Community Cooperatively Committed to Communicating.

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