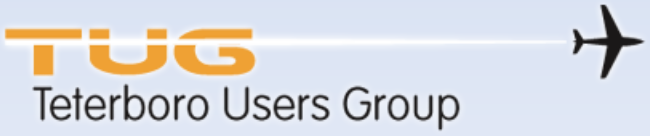
TUG Briefing

August 2012 CNS TF Meeting



AFS-200

- NASA ASAP - New AC recently published (00-46E)

CPDLC

- With voice communication between air and ground, the Pilot Flying (PF) and the Pilot Not Flying (PNF) are able to hear ATC messages.
- With CPDLC, in contrast, the PNF - who is responsible for ATC communication - may be the only one aware of an ATC message.
- Consequently, there is a risk of the PNF reading and acknowledging an ATC instruction without the PF being informed about it. In order to resolve this issue, additional intra-cockpit co-ordination is required. **The PNF could read out the data link message and wait for a verbal or non-verbal (e.g. nod) response of the PF before responding to the message.**

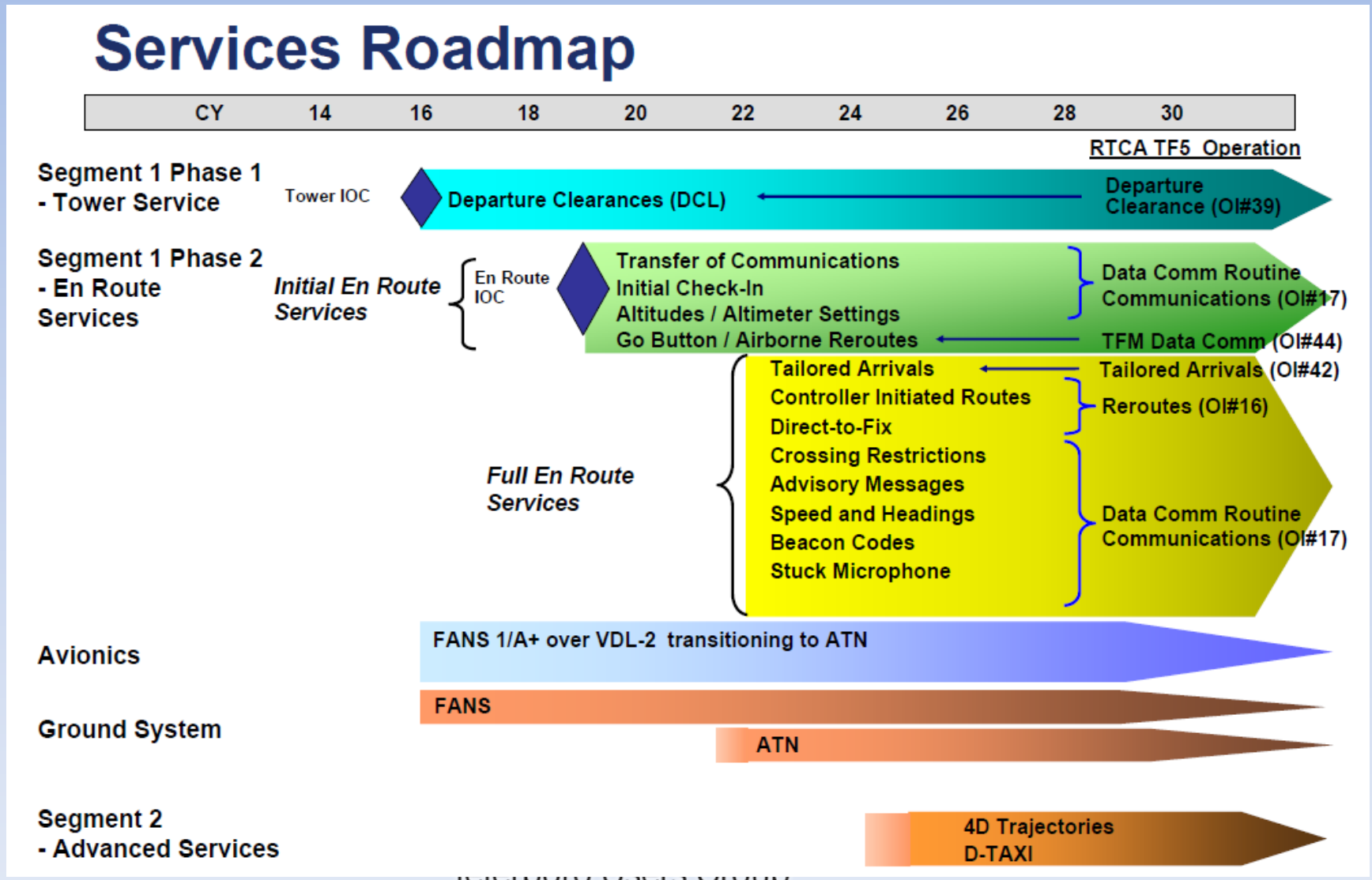
- *BUT –When both pilots hear the clearance, they each have an independent interpretation of what they heard. When one pilot reads the clearance aloud, it sets up an expectation of what is on the display. Humans often see what they expect to see. Even if/when the 2nd pilot looks at the display to read the clearance, he would most likely see what he heard - even if what is on the display is different. n*
- *This is a variation of a 'readback/hearback' error*
- ***The smaller the discrepancy between two versions, the harder it is to detect.***

- Current ICAO standards only require pilots to speak and understand aviation English
- No ICAO standard exists for reading and writing—skills that will be needed for Data Communication
- *Note: FAA requires pilots to be able to read and write English in addition to speaking and understanding English.*

- Presented the need for pilots who will use Controller-Pilot Data Link Communications to be able to read and write aviation English to ICAO within the Operational Data Link Panel (OPLINKP) and then to Air Navigation Commission.

- Datalink has obvious advantages over voice, but English can be a difficult language to read –evewhen you can speak and understand the limited aviation vocabulary o ‘c’ in ‘climb’ compared to ‘c’ in ‘descend’
- o could the the ‘b’ in ‘climb” be interpreted as an abbreviation ?
- o Reading requires training
- n

Datacomm

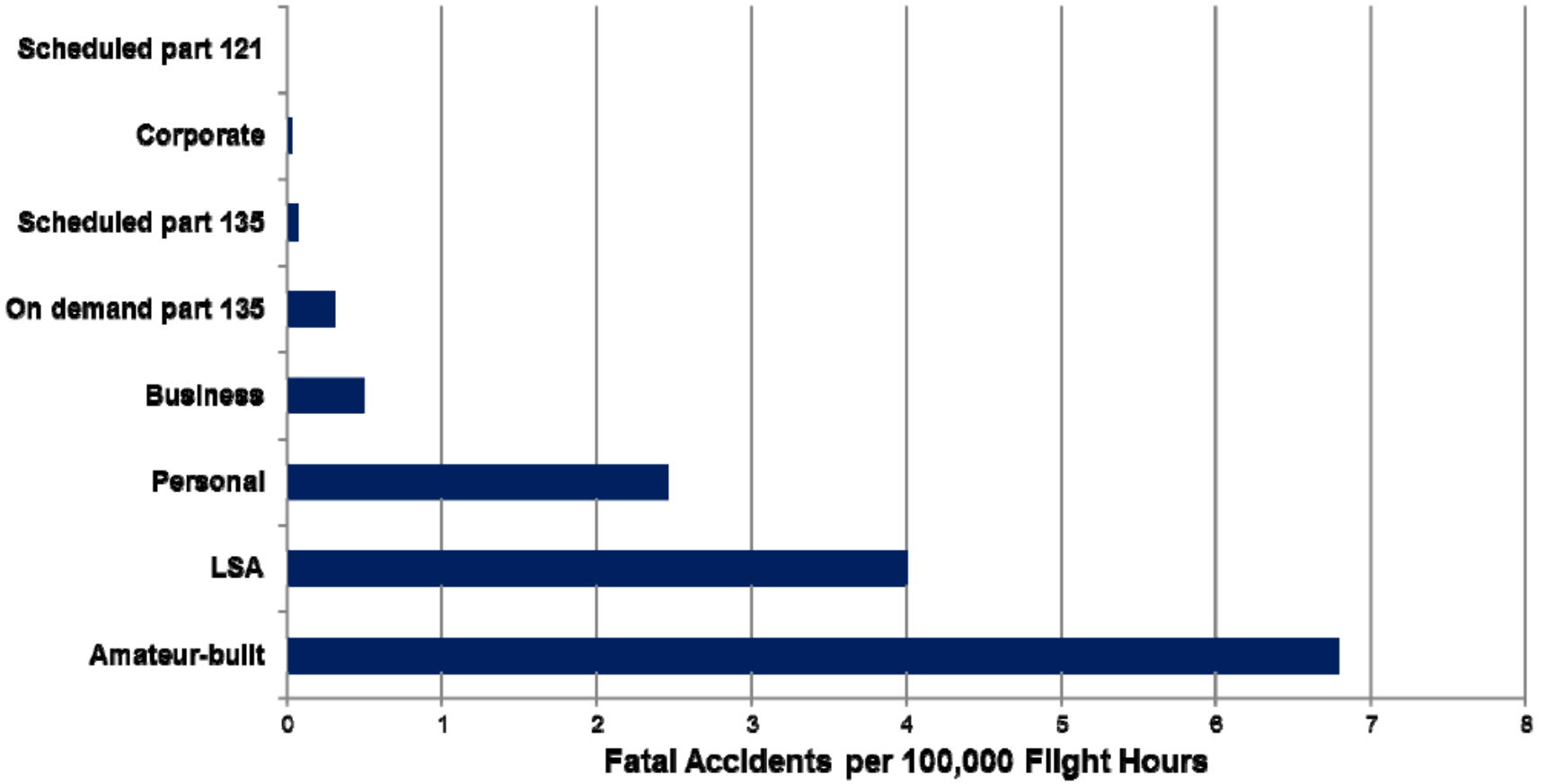

Services Roadmap
CY 14 16 18 20 22 24 26 28 30
RTCA TF5 Operation
Segment 1 Phase 1
- Tower Service
Tower IOC
Departure Clearances (DCL)
Departure Clearance (OI#39)
Segment 1 Phase 2
- En Route Services
Initial En Route Services
En Route IOC
Transfer of Communications
Initial Check-In
Altitudes / Altimeter Settings
Go Button / Airborne Reroutes
Data Comm Routine Communications (OI#17)
TFM Data Comm (OI#44)
Full En Route Services
Tailored Arrivals
Controller Initiated Routes
Direct-to-Fix
Crossing Restrictions
Advisory Messages
Speed and Headings
Beacon Codes
Stuck Microphone
Tailored Arrivals (OI#42)
Reroutes (OI#16)
Data Comm Routine Communications (OI#17)
Avionics
FANS 1/A+ over VDL-2 transitioning to ATN
Ground System
FANS
ATN
Segment 2
- Advanced Services
4D Trajectories
D-TAXI

FAA Automation Workshop

- **Shared lessons learned**
- **Identified**
- – Lessons learned
- – Issues
- – Different types of automation (some common ground
- in expectations for such systems for safety, ease of
- use, ???)
- – Considerations
- – Trends
- – Desired regulatory improvement

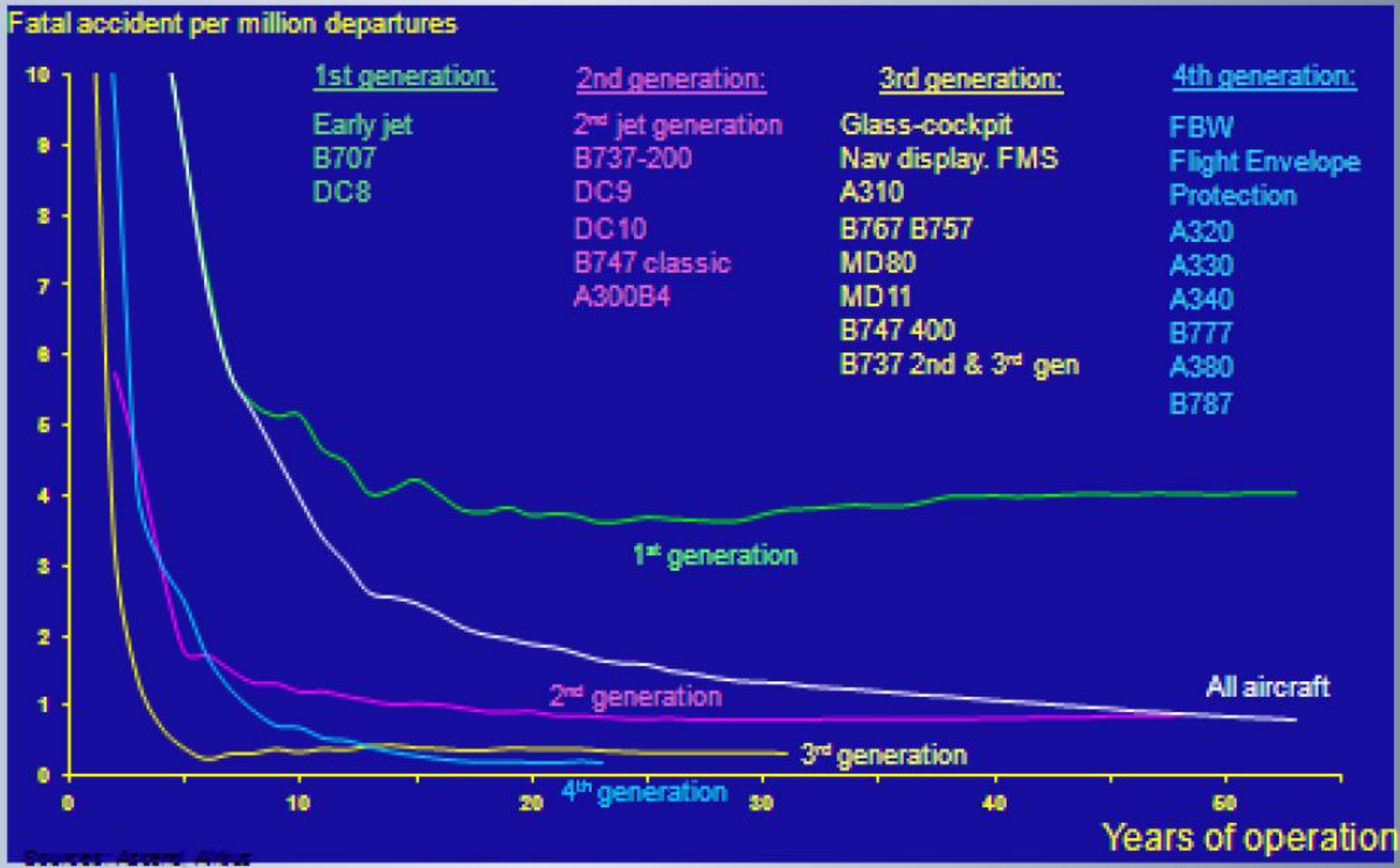
U.S. Aviation Fatal Accident Rates

Annual Average from 2005 through 2009



TUG
Teterboro Users Group

Actual results: Fatal accident rate – 4Q 2011



AIRBUS

Common (incorrect) Answers

- **“Technology is THE answer”**
- **Automation reduces the need for pilot training**
- **“To eliminate human error, automate the human out of the system”**
- **Insufficient integration with airspace**

Common Issues

- **Mode confusion**
- **Information automation is increasing, including implementations that may result in errors and confusion**
- **FMS programming errors**
- **Pilots sometimes delegate too much authority to automated systems**

The basic Question???

- **Is the automated system backing up the pilot or is the pilot backing up the automated system? Or is the pilot a passenger, “along for the ride”?**

- Questions?