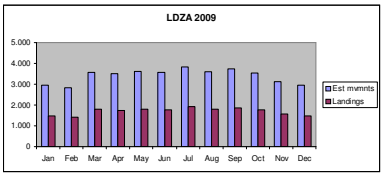
Zagreb Airport:
Reconstruction and repavement of RWY 05, TWYs A and B

Safety Assessment Activities

Presentation for the workshop ES2 WS4-10
(Safety Assessment Experience Sharing)

Traffic Environment

- Zagreb Airport (LDZA): the main airport of Croatia
- Traffic (source http://www.zagreb-airport.hr/en/ for landings):



LDZA main features

RWY 05

RWY 23

Length: 3.252 m

CAT II / III

Planning of works

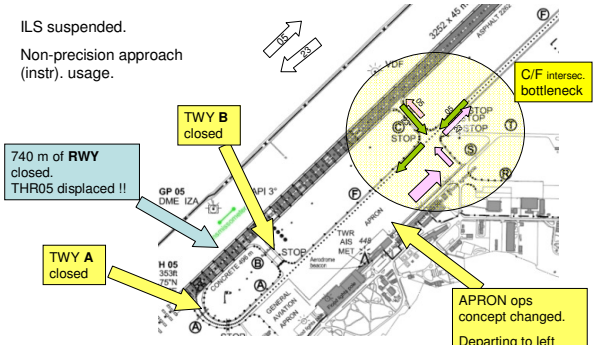
- Preparatory, planning and coordination activities started in autumn 2008.
- Airport informed ANSP about the intention.
- The period of reconstruction works: Apr-June 2010: 2,5 MO.
- The works that have been done:

The reconstruction work on the concrete pavement (daily - daylight;
RWY would be open for the operations,
but shortened for 740 m).

Impact to mnvr areas

ILS suspended.

Non-precision approach (instr). usage.



Extract from: AIP LD_AD_2_LDZA_2-15 + comments by author

Establishing the SAFWG

- Safety Working Group (SAFWG) was established by the Airport, asking CTN and ANSP to nominate their reps.
- CTN and ANSP gave their Safety Managers to the SAFWG.
- The formal composition of SAFWG:

3x from Zagreb Airport
1x from CTN (CTN-SM) – **PILOT**
1x from Crocontrol (ANSP-SM)

In total: 16 meetings of SAFWG

Other Experts involvement

- very deep involvement of 4 additional experts from Crocontrol to participate at SAFWG meetings, covering different fields:

Exp1: *Navigation Procedures (SID, STAR, etc) and Charts Design*

Exp2: *ATC/TWR Technology Designer (also the ATC/TWR instructor)*

Exp3: *CNS Engineer, specialised for Airport environment*

Exp4: *SAF methodology, administration&documetation support*

NOTE:

2 of them (Exp1 & Exp2) were deeply involved in coordination with airport experts in another WG which was responsible for the design of the change.

This involvement was crucial for success of the safety assessment

SAFWG: deliverables

- Each meeting: **The meeting minutes**
- Occassionally, as necessary, additional documents were attached to the meeting minutes, such as:
  - *hazard log,*
  - *risk assessment sheets,*
  - *pictures, etc*
- Two main deliverables of SAFWG:
  - **Preliminary Safety Assessment Report**: *to be delivered at least 2 months before start of the works*
  - **Final Safety Assessment Report**: *to be delivered at least 1 month before start of the works*

Saf. A. Methodology

1st round (until Dec 2009): **Location approach**

- the locations affected by works and then considered potential hazards, comapring new situation with the old one.

2nd round (from Jan 2010): **Type of Operation approach**

- *four types of "FAST" operations,*
- *taxing and*
- *APRON operations.*

- the **common** RCS agreed !!

Content of the Safety Assessment Report

1. Purpose and the Scope of the Safety Assessment
2. Concept of Works
3. Reminder and reference to the Preliminary Report
4. Safety Assessment Methodology
5. Hazard Identificaton
6. Definition of common RCS
7. Safety Objectives
8. The Safety Recommendations
9. Conclusion
10. Appendices --→

..... Appendices

- List of risks
- List of safety recomendations
- Evaluation of identified risks
- Status of implementation of mit. measures from Prelim. Rprt
- RCS/SOCS
- Severity Indicators acc. to the Eurocontrol SAM
- Check list for the risk assessment for the needs of ANSP
- AIP SUP 2010-01 (AIRAC SUP) with detailed information on wrk

Mitigation measures

- Most of the recommendations/measures were accepted and implemented
- Significant impact for the APP/RDR services in the TMA for arriving flights: precise sequencing.
- Internal safety assessment within ANSP took place as well, participating: SAF, CNS technical experts, MET expert, AIS expert, OPS/TWR, OPS/APP, OPS/ACC
- Long and deep briefings of all ZAG TWR ATCOs as well as ZAG APP ATCOs were held.

Follow-up

- *A few meetings took place after the start of the works*
- *Occurrence reporting system - feedback*
- *Before coming-back to the "normal operations", close to the finish of the works, coordination was done again trilateraly*
- *Do some pilots miss to read NOTAMs and AIP SUPs?*
- *Jeppesen charts, AIP charts*

Change Oversight Process

- Supervision by the CCAA was planned on time
- They were involved 3-4 MO before planned start of works, so a couple of specific meetings took place between ANSP and NSA
- NSA participated at the SAFWG meetings

Conclusions (1 of 2)

- Complex change but limited time / limited location
- Excellent collaboration between the experts from 3 different companies)
- IT IS NECESSARY to have these parties around the same table !!
- Impact on ANS service was additionally assessed internally within ANSP
- use of SAM (preferable methodology)

Conclusion (2 of 2)

- Deep involvement of ANSP experts - crucialy helped, although it was airport's modification.
- ANSP (also other partners) decided to allocate enough manpower for the safety assessment activities for the benefit of pax and workers' safety.
- involvement of CCAA/NSA
- Pilots: charts/NOTAMs/AIP

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