

Safety Bulletin

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Inside this issue

Editorial 2

Safety Culture means Reporting Culture

Lessons learned 3 - 5

1st case : two departures with same initial route

2nd case : same A/C' type and company,
different climb performance

System Safety Management..... 6

What's actually going on?

Statistics 7-8

2003 figures

The invisible part of the Iceberg 9

Please report all occurrences !



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Editorial



Safety Culture means Reporting Culture

James Reason - one of the Safety Gurus in the world - says that a Reporting Culture is one of the key elements of a Safety Culture. And two other elements - Just culture and Learning Culture - are linked very closely to this Safety Culture.

Where is skyguide's Reporting Culture?

The figures show that we are progressing quite well: Last year 689 OIR were reported, after 4 months of this year already 362 OIR have been written (+58%). In 2003 we received 101 SIR, until end of April we already received 53 (+57%). How much of the iceberg (see last page of this bulletin) is this? We do not know but the figures from Denmark can give us an idea how the number of reports could increase in a non-punitive environment. In the first year after the implementation of such a system in Denmark the number of reports increased from 15 to 960!

Step towards a CIRP

For the time being the legal system in Switzerland still does not allow a non-punitive reporting. In order to foster the current reporting culture some major changes will be implemented in our internal reporting organisation and reporting process in the second half of this year. With these changes - and under the conditions given by Swiss law - we are as close as possible to a CIRP (Confidential Incident Reporting Programme).

Some of the major changes:

One single organisation is responsible for the occurrence reporting process:

All occurrences have to be investigated, classified and documented in the same way. Therefore all Regional Investigation Teams (RIT) and all other investigation activities will be centralised under one responsibility.

The new organisation is outside O department

In order to separate the investigation from the organisation that is involved in the occurrence, the new organisation (DMO) for occurrence investigation will be within the Safety - and Quality Management.

Confidentiality

It is not easy - for nobody - to discuss his/hers own errors. Even more if separation was infringed possibly caused by a controller's error. To make it easier for controllers to discuss such occurrences the interviews will be done by specially trained controllers. The details of these interviews will be treated confidentially within the DMO organisation. In the final internal report no names will be mentioned, just facts (radar plot, transcripts, if appropriate other factual analysis) and recommendations towards the concerned units. Exception: If the investigation detected unacceptable behaviour or gross negligence the unit management has to be informed about the controller's name.

The investigation of Human Factor has a high priority

The investigators will use the HERA-JANUS tools for their interviews. HERA JANUS is a methodology for analyzing human errors in ATM. The purpose of HERA JANUS is to increase the effectiveness of error analysis and prevention. It has arisen as a result of the increasing importance of human error, error recovery and error reduction in ATM.

Close collaboration with O department

In order to ensure the implementation of the recommendations and to enable lessons to be learned (Safety Letters, Safety Bulletin, Refresher, Training) a very close collaboration with O department is a key factor for the success of this new approach of skyguide's occurrence reporting.

Conclusion

I am convinced that these changes will help us to make the iceberg not just more visible (more transparency due to a better knowledge and understanding of errors) but - and that is the main objective - to make the iceberg smaller (less incidents due to the implementation of safety recommendations and due to lessons dissemination).

Martin Probst, DM

"An incident from which no lessons are learned is an incident which has been wasted in air safety terms."

(Weston & Baker)

"The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability."

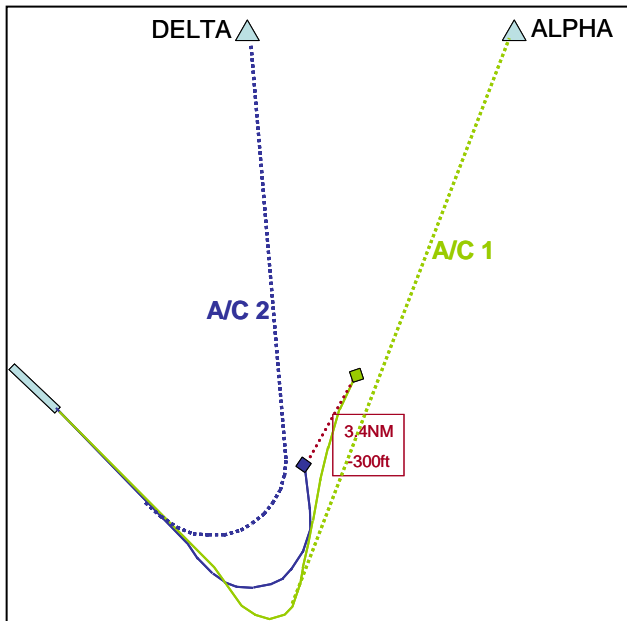
(ICAO, 1994, Annex 13, p.14)

Lessons learned – 1st case

Description of event

Two jet a/c with differing performance are successively cleared for take off on the same initial SID, with an interval of about 3 minutes. Both a/c are cleared at initial contact with departure control to the same FL.

The DEP ATCO quickly realizes that A/C 2 is faster than A/C 1. As the routes to be flown diverge at the end of the SID, the ATCO decides to re-clear each a/c direct to the next flight-planned way point, A/C 1 direct to ALPHA and A/C 2 direct to DELTA.



The clearances are the following ones:

'A/C 1, route direct to ALPHA'

Followed 30" later by

'A/C 2, left turn approved direct to DELTA'

The dashed lines represent the **assumed** trajectories of the a/c.

Neither of the flight crews responds immediately to the new clearances.

A/C 1 doesn't correctly understand the new clearance and asks for confirmation. A/C 2 continues for a period of time before turning left off the SID to DELTA. A few seconds later the separation minima are infringed and the closest distance between these two a/c is 3.4NM and 300ft.

What went wrong?

The first clearance to A/C 2 to climb to the same FL as A/C 1 was an unsafe clearance because it did not take into account the different performance characteristics of the aircraft involved.

Following identification of a possible conflict, the technique employed by the ATCO proved ineffective. Positive control was not applied, nor was the immediacy of the situation conveyed to the a/c. Instead, the ATCO relied on assumed trajectories to ensure separation, which was inappropriate in this circumstance.

Recommendation

In similar situations, apply positive control techniques, and, issue clear and unambiguous clearances to flight crews:

- Apply vertical separation first, and maintain this until radar separation is assured
- Assign divergent headings as appropriate to enable further climb/descent
- Use a phraseology that will make the crew aware of the urgency of the situation
"A/C 2 turn left heading nnn° due ..." or
"A/C 2 turn left immediately heading nnn° to avoid traffic at..."

skyguide will actively monitor if similar cases are reoccurring.

And...never assume !!!

OSG (OPS Safety Group)



Lessons learned – 2nd case (ctn'd)

At the moment Flight 1 gets the clearance to fly with left turn direct to MINGA, the STCA appears; Distance between flight 1 and 2 is 6,1NM, Flight 1 out of FL142 and GS280kts, Flight 2 out of FL140 and GS 330kts. There are relatively strong winds coming from north.

The controller stops Flight 2 at FL150. Maintaining FL150 Flight 2 speeds up to GS370kts.

At the time, Flight 1 crosses the flight path of Flight 2, the separation is 5NM, Flight 1 out of FL153, Flight 2 at FL150. After passing the flight path of Flight 2 the separation decreases to a minimum of 3,3NM (900ft) or 300ft(4,9NM).

Later on, the controller asked the pilot of Flight 1 about the reason for flying so slowly:

RTF exchange between ATCO and Pilot 1:

ATCO: Flight 1 for my information, are you flying with reduced speed?

Pilot: What do you mean about reduced speed?

ATCO: I mean that company aircraft climbing out 10NM behind you was 60 kts faster and it was also a Jumbolino, that's all I'm asking.

Pilot: OK, we have 210 and we have full weight and we are supposed to have MINGA at which flight level? (without coordination with next center at FL240)

ATCO: Ok that's no problem I was just asking for my information.

Pilot: Ok, so if you tell me that I can be at MINGA FL210 then I can increase the speed.

What went wrong?

The controller realizes the speed difference just before the STCA appears.

At the screen, the Groundspeed (GS) is at position "hook", therefore the GS is not permanently visible.

Regulations

ATM Manual Switzerland
Section 7

3.6.1.1 SSR Separation:

Apply radar separation so that the distance between:

- a) the centres of the RPS
- b)

is never less than the prescribed minimum

3.7 Radar Separation Minima

The following radar separation minima apply whether using SSR radar and/or primary radar:

- a) if MRT is on: 5 NM
- b)

Recommendation:

1) **In the Label, the GS should always be in the position "ON".**

2) *Conclusions about possible flight performances may be extracted of Type of aircraft, Point of DEP and DEST and of FL-Restrictions, which have to be respected.*

OSG (OPS Safety Group)

System Safety Management

What is actually going on ?

The following table provides a short overview of the main activities that are running in the Systems Safety

Management domain *under the supervision and coaching of the DMR staff*. For any question you may have or for deeper details on the subject, please contact directly the Program Manager in charge of the related Safety Assessment.

Safety Assessment Programs status				
ATM-System	Program Manager	Safety Manager	Status	Target date
Eurocat2000	T.Bregou	F.Balda	Running	31.12.2004
ZAP-DVO3	W.Vogt	S.Barraz	Initialized	2005
SAMAX/SAMOPS	G.Bailue	M.Vettovaglia	Initialized	2005
UAC-CH	Y. Le Roux	S.Barraz	Initialized	2005
EMRA DUB	J.Büchi	JM.Bory	Standby	2005
sTSA	A.Maag	S.Barraz	Standby	<i>Project currently frozen</i>
ZAP-DVO2 (Step 2)	W.Vogt	S.Barraz	Achieved	30.04.2004
PRIMUS	P.Kuenzli	JM. Bory	Achieved	31.03.2004
ASR-10 GVA	Ph.Chauffoureaux	S.Barraz	Achieved	09.12.2003
ZAP-DVO2 (Step 1)	W.Vogt	S.Barraz	Achieved	29.10.2003
SETInet	D.Epp	JM.Bory	Achieved	30.09.2003
TWR-ZRH	A.Heiter	S.Barraz	Achieved	10.06.2003
IFREG	Y. Le Roux	JM.Bory	Achieved	11.02.2003

Running

Mandate officially attributed by the skyguide Safety Steering Group, Safety Program Plan validated, Safety Assessment Program team constituted and working sessions planned.

Initialized

Mandate officially attributed by the skyguide Safety Steering Group and Safety Program Plan under preparation.

Standby

Evaluation of feasibility, added value and resources necessary to the completion of a Safety Assessment done. Decision from the skyguide Safety Steering Group required.

Achieved

Safety Case Document delivered and officially endorsed by the skyguide Safety Steering Group. Safety Implementation Plan under preparation by the Program Manager.

Statistics

OPS Occurrence investigations 2003

The Eurocontrol regulatory requirement ESARR2 gives a minimum list of safety-related events which have to be notified and analysed. This is to ensure that such events are better taken into account and can be analysed in order to determine not only the appropriate corrective measures, but also the areas where flight safety could be improved through changes to the ATM system.

The implementation of a new reporting culture needs a certain time (years), and skyguide is still in the construction phase. As ATCOs are expected to report all the incidents, it is obvious that the number of events notified is significantly increasing. This doesn't indicate a deterioration in the overall safety level but shows a greater transparency of our operations, condition for learning from our mistakes and make constant improvements.

The following safety relevant occurrences were notified by skyguide during 2003. (Source RIT data base)

149	Unauthorised penetration of airspace
83	No contact
41	Level bust
11	Wake vortex
8	Runway incursion
6	Similar call signs
2	Near CFIT

Skyguide collaborates closely with Eurocontrol for the prevention of all these categories of events.

65	AIRPROX
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The increase of notified AIRPROX since 1998 is due to the new reporting culture. Switzerland is one amongst many other European states experiencing this phenomena. The proportion of the skyguide contribution however is more favourable for our company in 2003 than in the preceding years.

Definitions (Eurocontrol)

ATM direct contribution

Where at least one ATM event or item was judged to be **DIRECTLY** in the chain of events leading to an accident or incident.

Without that ATM event, it is considered that the occurrence would not have happened.

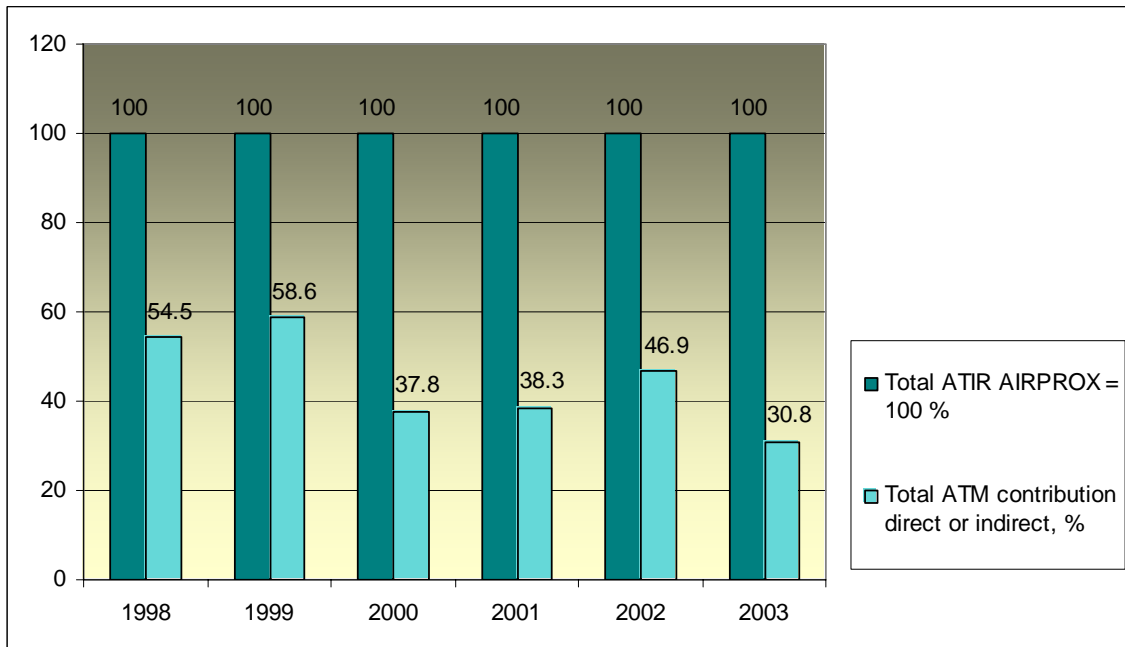
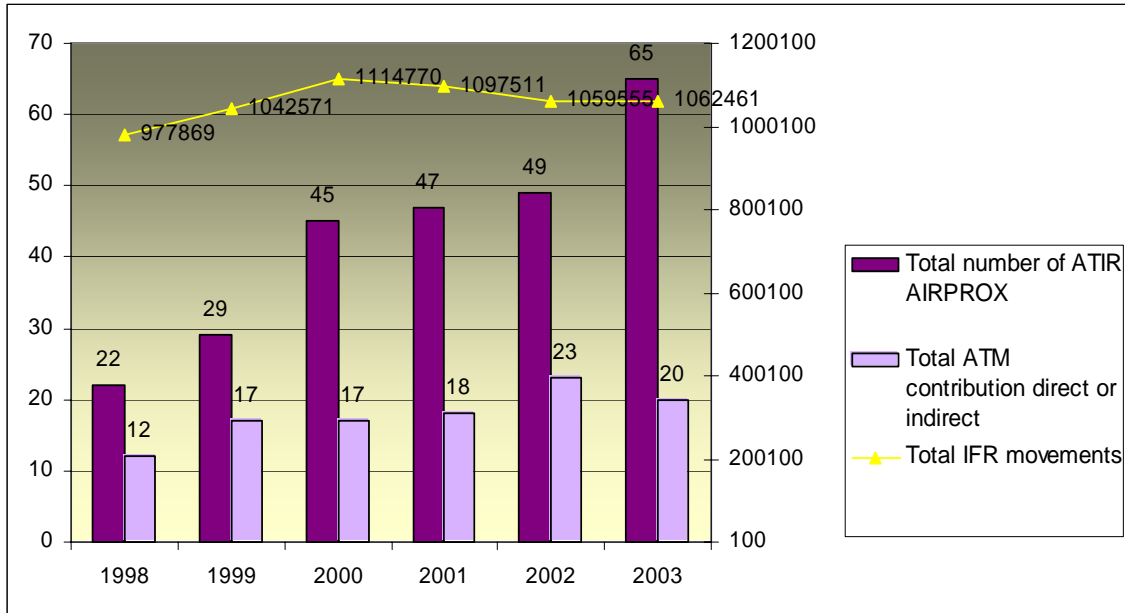
ATM indirect contribution

Where not ATM event or item was judged to be **DIRECTLY** in the causal chain of events leading to an accident or incident, but where at least one ATM event potentially increased the level of risk or played a role in the emergence of the occurrence encountered by the aircraft.

Without such ATM event, it is considered that the accident or incident might still have happened.

(see next page)

Statistics (ctn'd)



OPS safety reporting management / Monica Simonet

The invisible part of the Iceberg

PLEASE REPORT!!!

