



**EASA**  
European Aviation Safety Agency



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**  
*A United Nations Specialized Agency*

# Results of EASA's analysis - Occurrences involving civil and non-cooperative military aircraft

ICAO Civil/Military Cooperation Symposium  
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# PRESENTATION OUTLINE

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# Background-European Commission Mandate

- **Safety concerns** expressed by some **EU Member States** in different fora  
→ **increase in occurrences involving civil and military aircraft** in 2014 and an increase in **‘non-cooperative’** military traffic over the high seas
- **Media attention** leading to public concerns
- **Civil and Military Decision Makers** needing an independent technical analysis and evaluation of the safety risk to civil aviation

All the above was the basis for the **European Commission Mandate to EASA** in December 2014:

- to conduct an analysis of the occurrences
- to report its conclusions and recommendations in 3 months



# Scope/objective of work

## ➤ Scope:

- Safety occurrences involving civil and 'non-cooperative' military aircraft over the high sea;
- Mainly Baltic Sea but conclusions and recommendations can also be applicable to other affected areas

## ➤ Objective:

- Assessment of the severity of the past events;
- Assessment of traffic, its foreseen evolution and traffic complexity in the area;
- Review the probability of occurrence;
- Review civil-military tactical coordination and other safety barriers (e.g. TCAS) effectiveness;
- Evaluation of the risk using an operational risk assessment method; and
- Provide conclusions and recommendations



# Data available

## ➤ Upon official request from EASA:

- data provided by Denmark, Estonia, Finland, Lithuania, Sweden (ANSP and NAAs) and Portugal;
- exchange of information have been done with experts from these Member States and experts from ICAO RO Paris and NATO

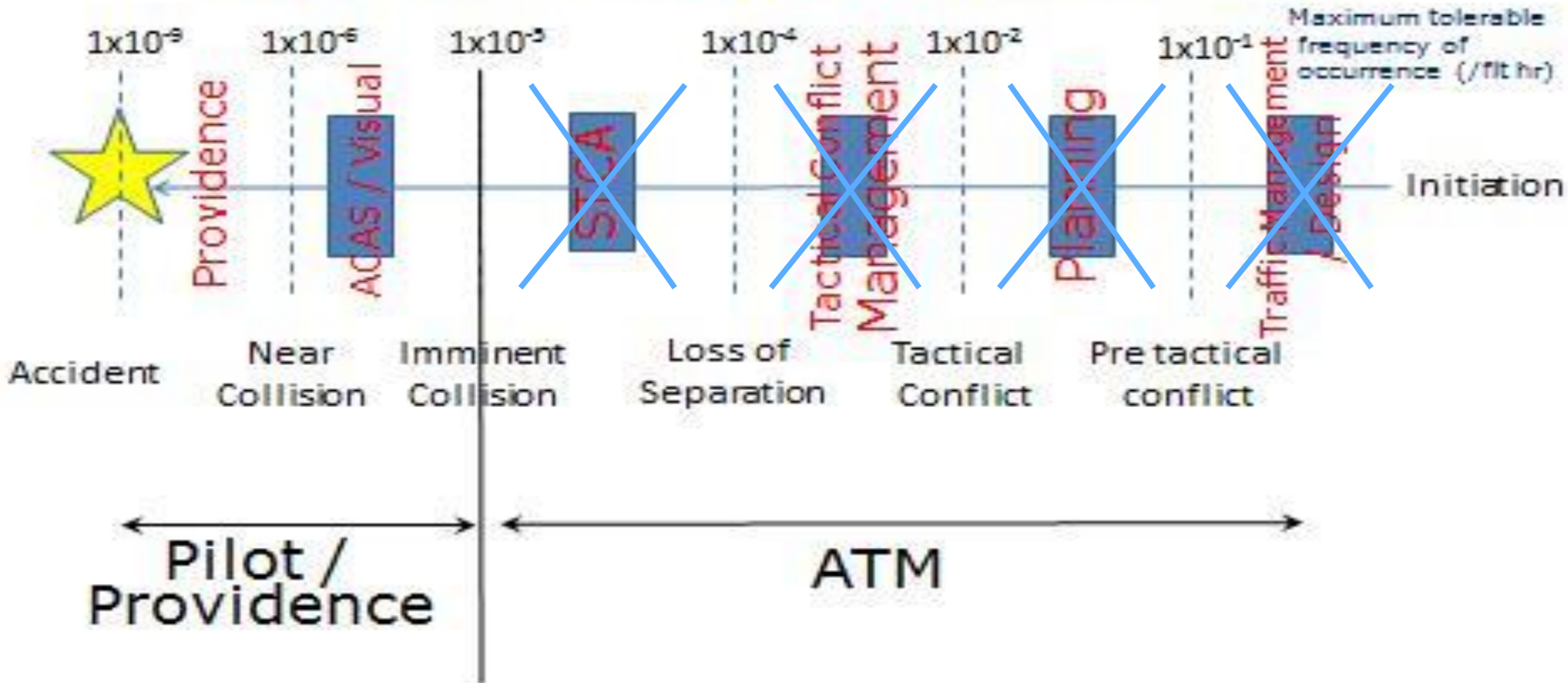
## ➤ Available data:

- Occurrences over past years: 4 in 2012, 6 in 2013, 16 in 2014
- Trends in Baltic States and Baltic Sea airspace:
  - Average annual traffic growth in the Baltic Sea: 2-3% until 2035
  - Number of 'non-cooperative' military flights in 2014 has increased 3 times compared to 2012
  - Overall number of military flights has increased by about 3 times compared to 2012
  - Scrambles initiated to intercept non-cooperative military aircraft have increased more than 3 times in 2014 compared to 2013



# Analysis- Mid-Air Collision Model

## Mid-Air Collision Model AIM





# ARMS (Aviation Risk Management Solutions) – Operational Risk Assessment (ORA)

## ➤ Event Risk Classification (ERC):

Question 2 What was the effectiveness of the remaining barriers between this event and the most credible accident scenario?				Question 1 If this event had escalated into an accident outcome, what would have been the most credible outcome?		Typical accident scenarios
Effective	Limited	Minimal	Not effective			
50	102	502	2500	Catastrophic Accident	Loss of aircraft or multiple fatalities (3 or more)	Loss of control, mid air collision, uncontrollable fire on board, explosions, total structural failure of the aircraft, collision with terrain
10	21	101	500	Major Accident	1 or 2 fatalities, multiple serious injuries, major damage to the aircraft	High speed taxiway collision, major turbulence injuries
2	4	20	100	Minor Injuries or damage	Minor injuries, minor damage to aircraft	Pushback accident, minor weather damage
	1			No accident outcome	No potential damage or injury could occur	Any event which could not escalate into an accident, even if it may have operational consequences (e.g. diversion, delay, individual sickness)

## ➤ Safety Issue Risk Assessment (SIRA):

- **Definition of the safety issue:** safety issue statement, description of hazard, related accident scenario, aircraft types considered, location considered, time period under study
- **Analysis of the potential accident scenario:** triggering event (probability of this to occur), Undesirable Operational State (UOS), Recoverability from the UOS, the accident outcome
- **Using SIRA excel tool of the ARMS method, the results is: safety risk class is ‘improvement’ which in accordance with ARMS means that ‘the risk is unacceptable but tolerable for a short period of time and that mitigating actions are required’**



# Conclusions

- Significant **increase in ‘non-cooperative’ military activity** and an **increase in the total number of military flights** over the Baltic Sea.
- **Significant increase in number of safety occurrences involving civil and non-cooperative military aircraft** over the high seas over past years.
- Risk assessment using the ARMS method concludes: **risk to civil aviation is high and this means that mitigating measures are needed to reduce the risk to an acceptable level.**
- **Aggravating factors:**
  - lack of situation awareness of civil Air Traffic Control (ATC) units and of civil aircraft,
  - potential increased complexity of the airspace due in particular to new operational concepts (e.g. free route airspace).



# Recommendations by EASA in the report

## ➤ To **ICAO**:

- continue working in close coordination with the Contracting States, the relevant military authorities and organisations, and other relevant stakeholders and to further update Circular 330; and
- consider possibility to amend Article 3 of the Chicago Convention to mandate publication of 'due regard' procedures in force.

## ➤ To **Member States**:

- endorse and fully apply Circular 330;
- closely coordinate to develop, harmonise and publish operational requirements and instructions for state aircraft to ensure that 'due regard' for civil aircraft is always maintained;
- develop and harmonise civil/military coordination procedures for ATM at European Union level;
- report relevant occurrences to EASA; and
- facilitate/make primary surveillance radar data available, in military units, to civil ATC units, in some cases

## ➤ To **European Union** to promote at the ICAO EURO NAT level, the principle of 'prior notification principle' (in relation to flight over the High Seas).



# Status and next steps

- EASA delivered the final report to the Commission on 30 of March 2015
- Report will be sent by Commission to EU Member States, ICAO and NATO on the 14 of April 2015
- EASA supports the Commission, Member States, the EU Political Decision Makers and ICAO in implementing actions considered necessary



# Conclusive remarks

- EASA has conducted in-depth analysis of available data and it shows a significant increase in 'non-cooperative' military activity and an increase in the total number of military flights over the Baltic Sea
- The analysis concludes that all this puts at risk the safety of civil aviation and it should be addressed
- The report identified a number of recommendations/actions which could contribute to mitigate the identified risk
- A number of these proposals require coordinated action at ICAO level
- EU supports a global solution and EU is ready to actively participate in it
- **Outcome of ICAO Symposium is extremely important → there is a need for a coordinated approach to be taken in the context of ICAO**



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**Thank you for your attention**

**Questions?**

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