



SAFETY MANAGEMENT SYSTEM IN MILITARY AVIATION

Safety Management Industry Collaboration Group, Industry Day

June 6th 2023

Helsinki, Finland

**Military Aviation Authority, Finland
Colonel Kim Juhala**



Puolustusvoimat

Försvarsmakten • The Finnish Defence Forces



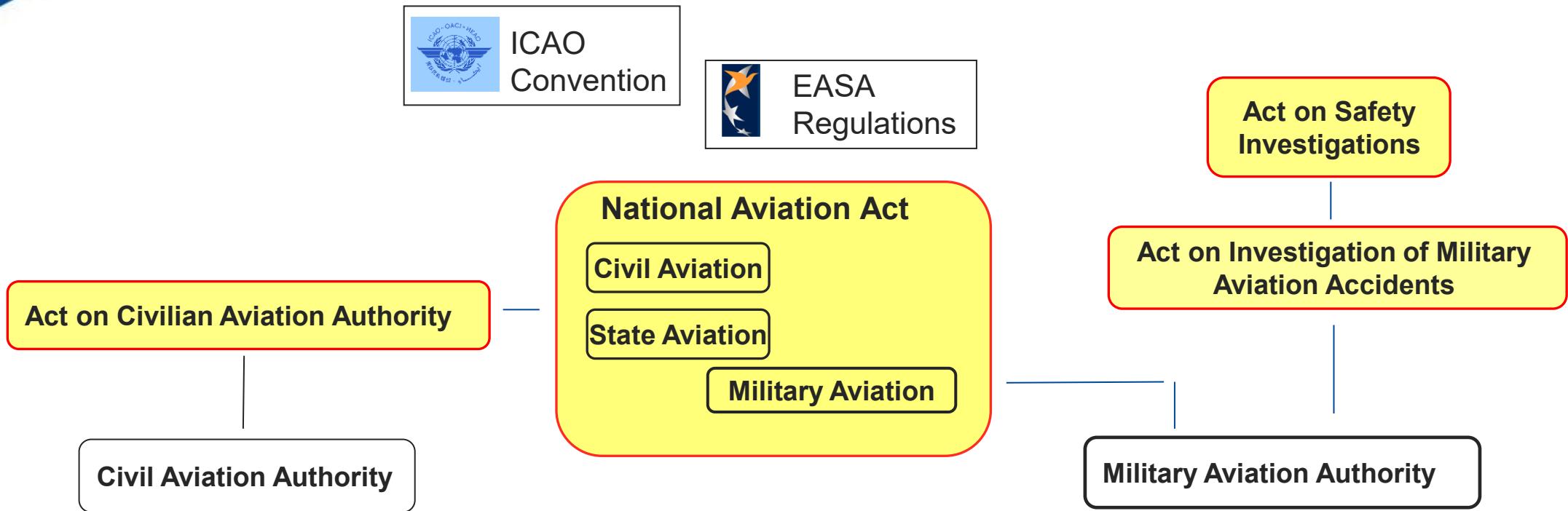
Presentation

- **Military Aviation & Safety Legislation**
- **Safety Management System – Current Status**
- **Safety Management System Assessments:**
 - Annual Flight Safety Program
 - Safety Reporting System and Safety Survey
 - Statistics
 - Challenges
- **Future SMS**
- **Discussion**





Aviation Safety Authorities - Legislation



TRAFICOM
Finnish Transport and Communications Agency



Military Aviation Authority, Finland
fimaa@mil.fi



Regulated Military Aviation

AIR FORCE AVIATION



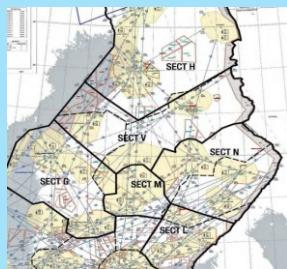
NAVY AVIATION



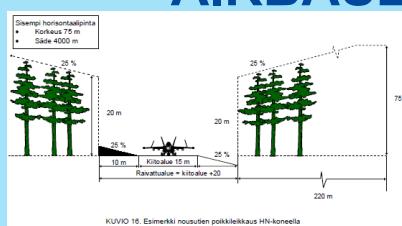
C4I



AIR SPACE MANAGEMENT



AIRBASES



ARMY AVIATION



DEFENCE AGENCIES AVIATION



Military
fimaa@

Patria

INSTA

Millog

FINNAIR

...



Air Force Aircraft



28 x G-115E
2016-



62 x F/A-18C/D



6 x PC-12NG
2010 – 2040+



3 x C-295M
2007 – 2037+



32 x Hawk51/66
1980 – 2038



64 x F-35A
2026-



3 x Learjet 35
1982 – 2030





Army Helicopters and UAVs





Safety Management System Requirements

SOTILASILMAILUN VIRANOMAISYKSIKKÖ
FINNISH MILITARY AVIATION AUTHORITY

SOTILASILMAILUMÄÄRÄYS
MILITARY AVIATION REGULATION
SIM-Er-YI-023

05.09.2011

PL 30, 41161 TIKKAKOSKI, FINLAND, Tel. +358 299 800, Fax +358 299 291 929

FIMAA Regulation SIM-Er-YI-023 Requirements for a Safety Management System in Military Aviation

VAATIMUKSET LENTOTURVALLISUUDEN
HALLINTAJÄRJESTELMÄLLE
SOTILASILMAILUSSA

Tällä määräyksellä asetetaan vähimmäisaatimukset lentoturvallisuuden hallintajärjestelmälle sotilasilmailussa. Määräys käsittelee sotilasilmailun lentoturvallisuuden hallintajärjestelmään liittyviä prosesseja, menettelytapoja ja toimintoja.

The operator of Military Aviation shall have an SMS, approved by FIMAA, that

- identifies safety hazards/risks**
- ensures mitigation of risks**
- ensures continuous control and assessment of the SMS**
- improves the SMS to maintain and enhance safety of military aviation**





Safety Management System - Operator

	Ilmavoimien Esikunta Lentoturvallisuusyksikkö TIKKAKOSKI	Määräys	1 (42)
		09.06.2021	HR612
<p>Pv joukko-osastot</p> <p><i>AFCOM FIN Regulation HR612</i> <i>Military Aviation Flight Safety Handbook</i></p> <p>PVHSMK - ILMAVE SOTILASILMAILUN LENTOTURVALLISUUSKÄSIKIRJA</p> <p>Normikokoelman lyhenne</p> <p>PVHSMK-ILMAVE</p> <p>Peruste</p> <p>Ilmailulaki (864/2014) Ilmailulaki 5, 6 ja 7 § (965/2018) Laki sotilasilmailuonnettomuksien tutkinnasta (526/2011) PVMK - SVY SIM-Er-YI-023, Vaatimukset lentoturvallisuuden hallintajärjestelmälle sotilasilmailussa (HH808)</p>			

Regulation content:

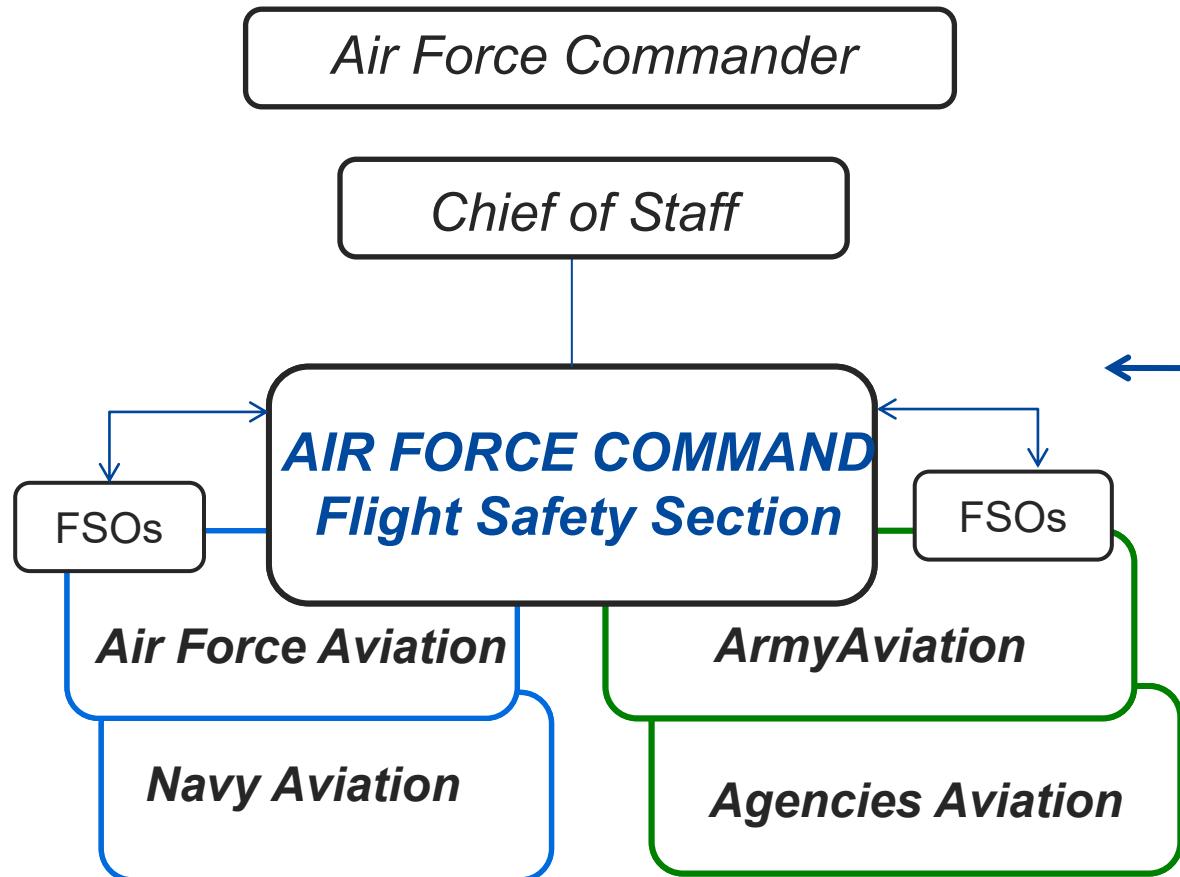
- **Description of the SMS**
- **Emphasis on preventive actions**
- **Guidelines for accident investigations and operational risk management**
- **Focuses on the importance of a safety culture and low threshold for reporting incidents**
- **Detailed instructions of flight safety tasks and procedures for military aviation operators in the Finnish Defence Forces**





Flight Safety Organization & Culture

Leadership & positive example



"Culture tools"

- ✓ Safety Program
- ✓ Safety Training
- ✓ Safety Publications
- ✓ Corrective Actions
- ✓ Safety Bulletins

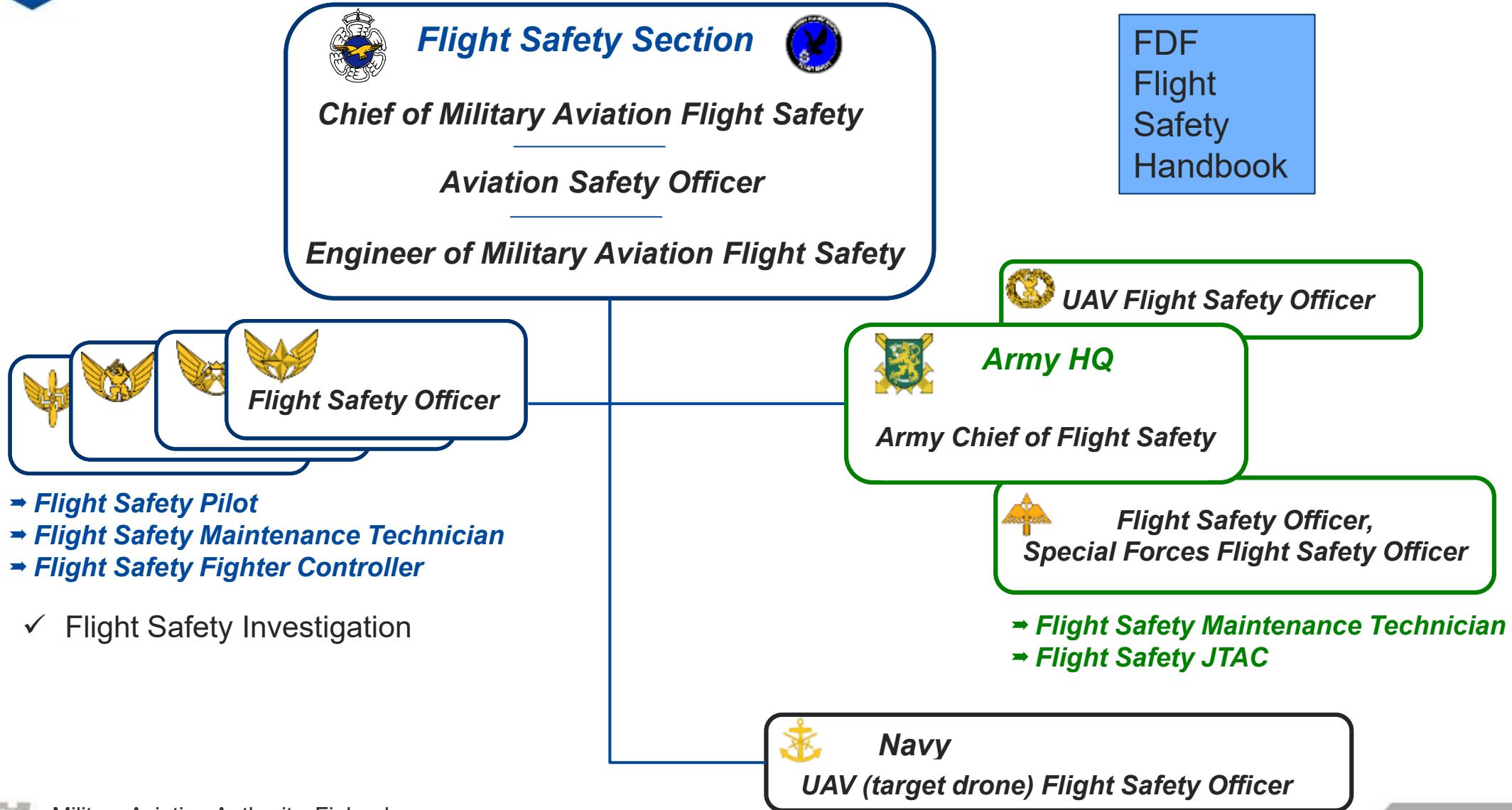
- ✓ Safety Inquiry
- ✓ Safety Surveys
- ✓ Data Analysis
- ✓ Gut Feeling

"Metrics"



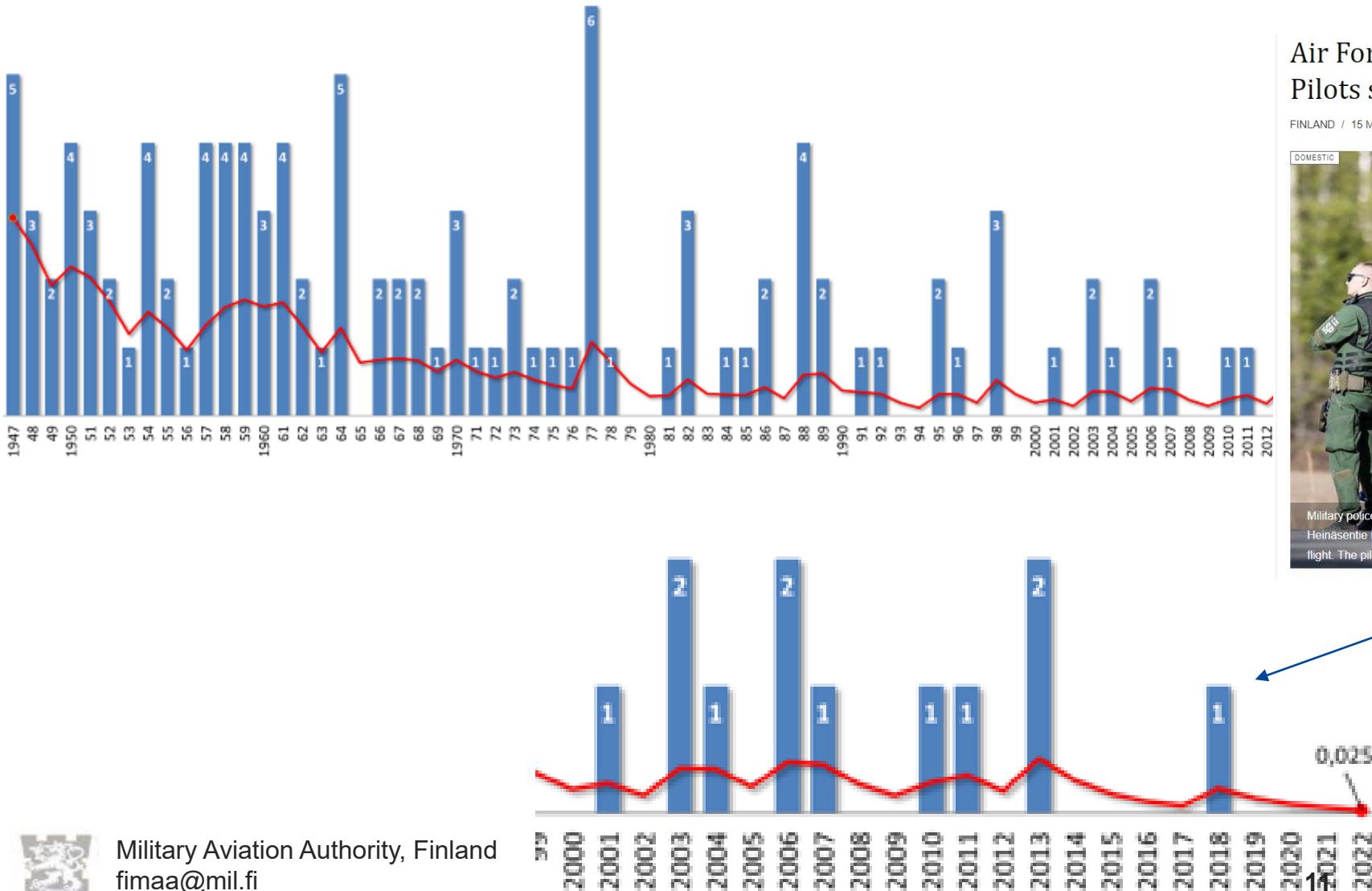


Flight Safety Organization





Military Aviation Accidents 1947-2022



Air Force Hawk jet crashes in central Finland -
Pilots safely eject

FINLAND / 15 MAY 2023





Military Aviation Flight Safety Program

- Published annually
- Preparation lead by AFCOM Flight Safety Team, inputs requested from all military aviation units
- Includes annual “Theme of Flight Safety” and “Flight Safety Priorities”
- The Commander of the Air Force endorses the Flight Safety Program
- Flight Safety Program is distributed to all units
- Progress of the Flight Safety Program is analyzed by Flight Safety Committees in all units
- Units provide an annual report on achieving the Flight Safety Goals
- Reports analyzed by the AFCOM Flight Safety Team and a summary report published annually





Flight Safety Theme and Priorities 2023

Theme

A World in Change – Performance and Recovery



Priorities

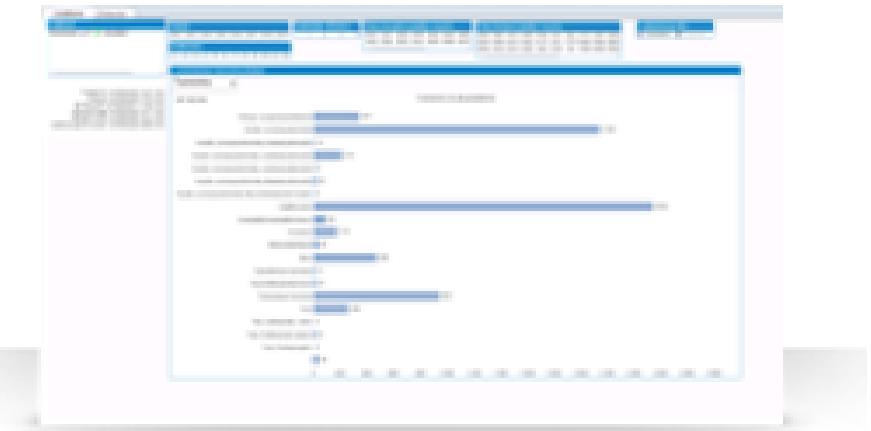
- **Maintaining professional skills in times of resource constraints**
- **Flight Safety during increasing volume of international activity**
- **Flight Safety reporting**





Safety Reporting System

- Computerized System
 - Online, real time, easy access
 - Data stored in a data warehouse
 - Accessible via an interactive analytics tool
- Three main groups
 - Aircrew
 - Technicians/maintainers, ground personnel
 - Fighter Controllers



Principle:

- Open reporting, non-anonymous
- Focus is on what happened, why, what corrective actions need to be taken
- Focus is not on who was involved





Flight Safety Numbers

- Operational activity:
 - ~200 aircraft (~ 30 000 FLH / year) + UAV/drones
 - Drone activity (significant increase)
 - Parachute and other airborne activities
- Flight Safety reporting activity per year:
 - Aircrew ~ 4000
 - UAV ~ 200
 - Maintenance ~ 750
 - Fighter Controllers ~ 120





Annual Flight Safety Surveys

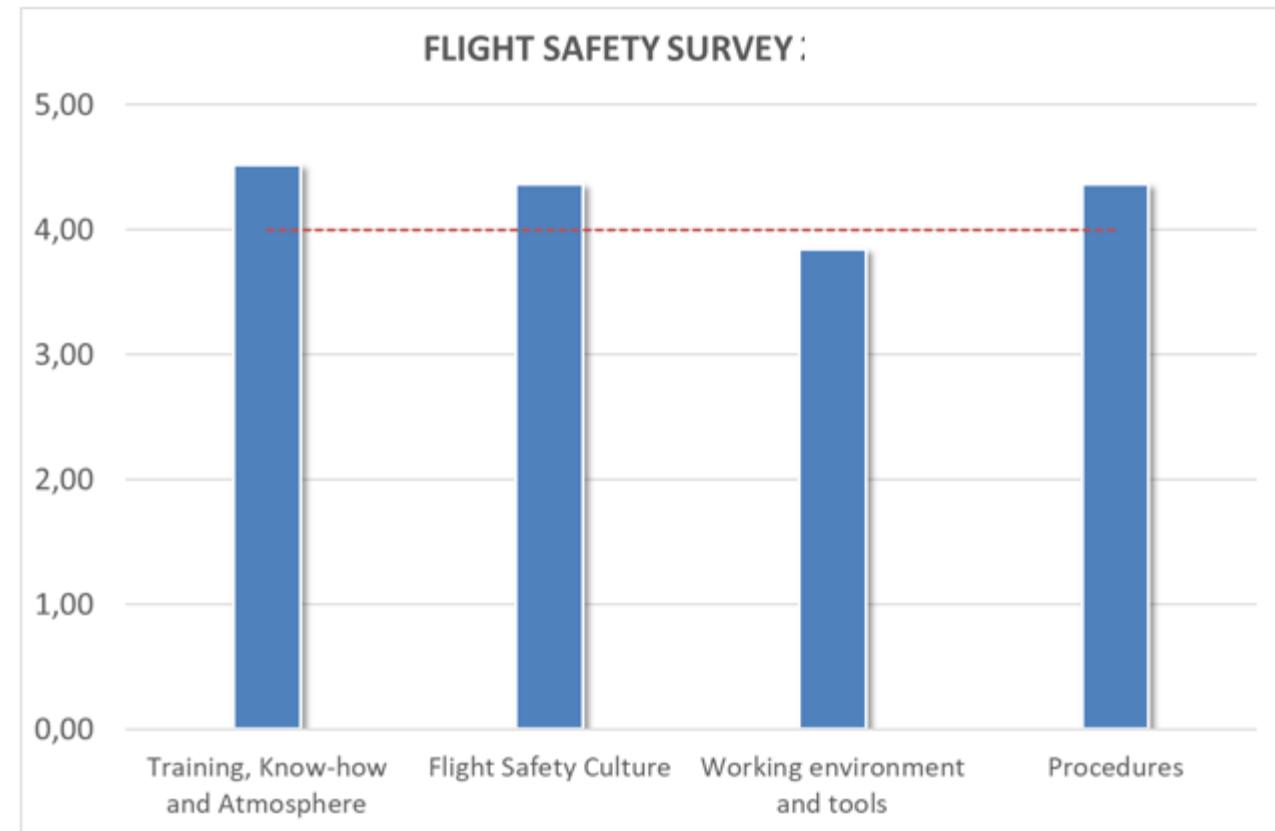
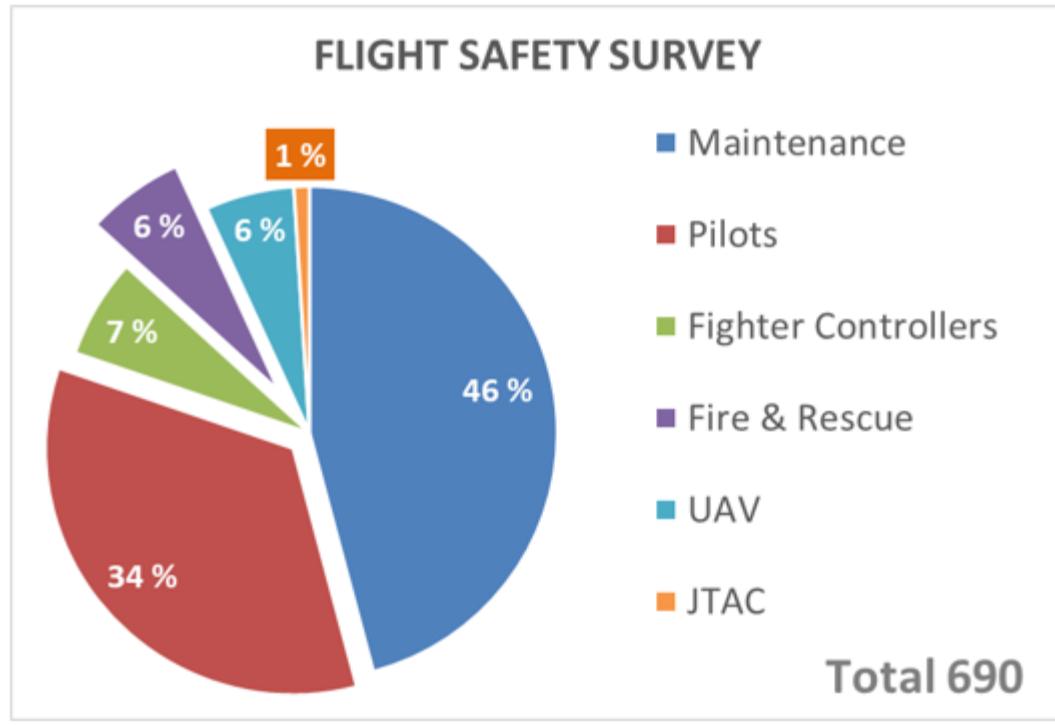


Kerro mielipiteesi!





Safety Survey Results





Annual & Periodic Flight Safety Reports



**SOTILASILMAILU LENTOTURVALLISUUSKERTOMUS
2021**

Sisällysluettelo

ILMAVOIMIEN KOMENTAJAN KATSaus	3
LENTOTURVALLISUUS 2021	5
Miehitetyin sotilasilmailun onnettomuudet 1947—2021	10
Onnettomuudet (muu sotilasilmailuonnettomuus)	11
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Hawk	33
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C-295 Casa	35
Pilatus	36
Learjet	37
NH-90	38
MD-500	39
LENTOTURVALLISUUSALAN PALKITSEMINEN	40





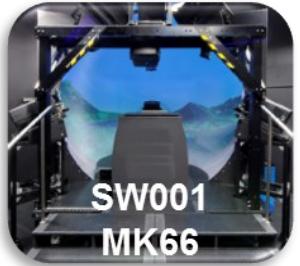
Flight Safety Assessment

- **Based on statistics the overall Flight Safety situation seems to be good**
- **Reporting threshold remains satisfactory, no major deviations from previous years**
 - **Reporting might be affected by personnel shortage, rush, workload**
 - **Weak signals of personnel being more concerned about the possibility of legal consequences**
- **Human factors still a significant contributor to incidents**
- **Generation change in personnel: Lack of experience / supervision**
- **Middle management level and key personnel overloaded: "Can do"-spirit is high**
- **Maintaining Just Culture and High Flight Safety is not a “given” but requires constant actions!**

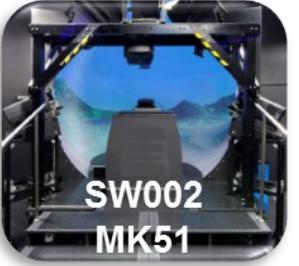




Challenges – Example: LVC-concept



SW001
MK66



SW002
MK51



HWPTT
51/66

VIRTUAL

CONSTRUCTIVE



LIVE C2

LIVE PLATFORMS





Safety Basics in a Nutshell

- Report, analyze, act, monitor
 - Engage and motivate leadership at all levels
 - Encourage open and honest reporting
 - Create tools for easy reporting
 - Provide fast feedback from reporting
 - Follow trends, analyze data
 - Pay attention to weak signals
 - Seek for best practices
 - Perform internal and external benchmarking
 - Take action, introduce corrective measures, support and monitor
- Emphasize importance of training
 - Human factors training
 - Operational training in demanding situations
 - Capitalize on new training technologies
- Reward



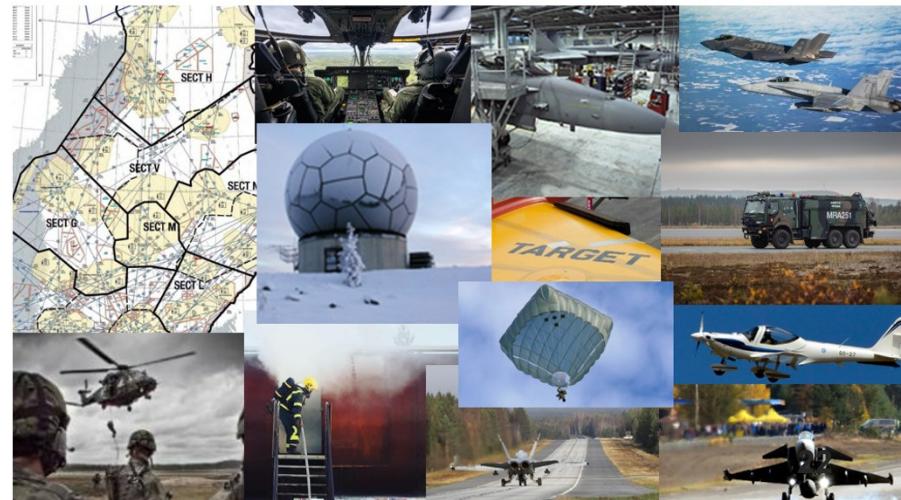


Military Aviation SMS Update

- Work initiated in 2023, new regulation by end of 2024
- Takes into account:
 - EASA, EDA, NATO SMS requirements and guidelines
 - New systems (manned and unmanned, training concepts, Special forces,...)
 - Benchmark with other nations military aviation SMS
 - Benefits from experiences and lessons learned



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Thank You for Your Attention!



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