



**MINISTÈRE
DES ARMÉES**

*Liberté
Égalité
Fraternité*



DSAÉ
DIRECTION DE LA SÉCURITÉ
AÉRONAUTIQUE D'ÉTAT

HOW TO BETTER ADAPT MILITARY AIRWORTHINESS, FROM PEACETIME TO HIGH INTENSITY CONFLICTS

BG Jean-Baptiste POURET
French State Aviation Airworthiness Director

SUMMARY

1. Status report on the implementation of AW in FR State

- 10 years after DSAÉ creation, achievement and perspectives

2. Fine tuning the AW, depending on the Battle rhythm

- Introduction of new regulatory tools to give more flexibility from training to operations and from low to high intensity conflicts

SUMMARY

1. Status report on the implementation of AW in FR State

- 10 years after DSAÉ creation, achievement and perspectives

2. Fine tuning the AW, depending on the Battle rhythm

- Introduction of new regulatory tools to give more flexibility from training to operations and from low to high intensity conflicts

FRENCH MILITARY AND STATE AVIATION

1150 IN SERVICE AIRCRAFTS/ 78 Types/ 250 000 FH per year

ARMED FORCES



TEST AIRCRAFTS



USERS OUT OF MOD



Legacy fleets

M2000 B, C et -5, Alphajet
 Ravitailleur C135, C130H
 A310, E3-F Awacs, ATL2, F50M, E2C HAWKEYE
 Puma, Gazelle, Super Puma, Fennec

Matured fleets

M2000 D
 A330 AUG, FALCON 2000, F50M
 TBM 700, CASA, Panther, Cougar,

New generation fleets

Rafale, A400M, C130J, MRTT,
 Caracal, Caïman, Tigre, Reaper, SMDR
 VADOR (B350 ALSR)

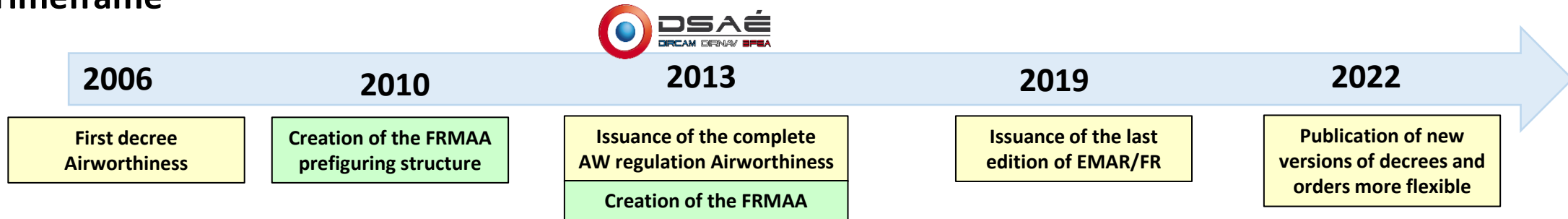
Future fleets

GUEPARD, SDT PATROLLER
 E2D Hawkeye, ALBATROS (AVSIMAR)
 ARCHANGE (FALCON 8X)



→ Timeframe

1. Status report on the implementation of AW in FR State



→ Main characteristics

- Airworthiness requirements are imposed through contracts
- >5000 technical events / year
- 325 Airworthiness reviews/ year (1 review/ 1 aircraft/ 3 years)
- ~ 200 organisations audits / year
- ~ 10 000 MAML to be managed in total

FRENCH MILITARY AND STATE AVIATION
1150 IN SERVICE AIRCRAFTS/ 78 Types/ 250 000 FH per year



Legacy fleets

- M2000 B, C et -5, Alphajet
- Ravitailleur C135, C130H
- A310, E3-F Awacs, ATL2, F50M, E2C HAWKEYE
- Puma, Gazelle, Super Puma, Fennec

Matured fleets

- M2000 D
- A330 AUG, FALCON 2000, F50M
- TBM 700, CASA, Panther, Cougar,

New generation fleets

- Rafale, A400M, C130J, MRTT,
- Caracal, Caïman, Tigre, Reaper, SMDR
- VADOR (B350 ALSR)

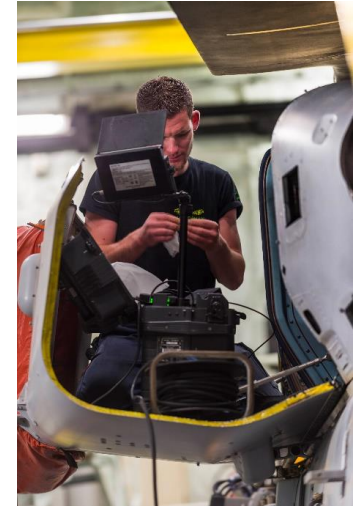
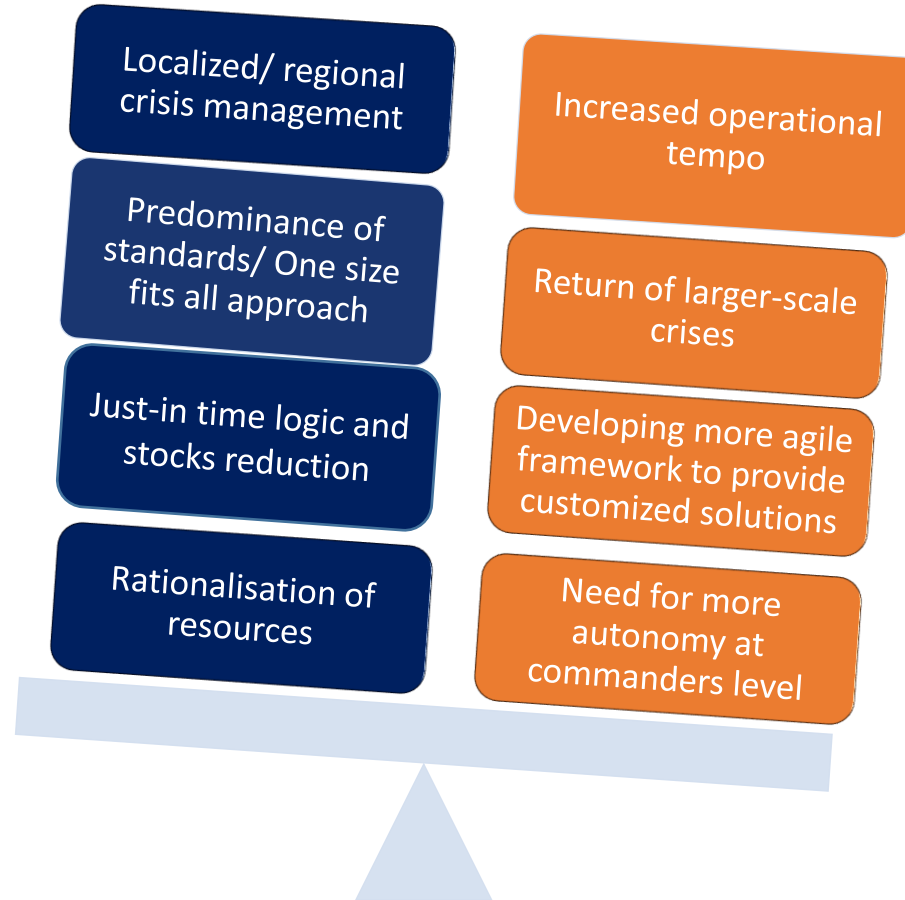
Future fleets

- GUEPARD, SDT PATROLLER
- E2D Hawkeye, ALBATROS (AVSIMAR)
- ARCHANGE (FALCON 8X)

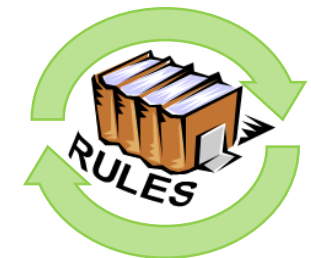


1. Status report on the implementation of AW in FR State

CURRENT CHALLENGES



→ Strong need for an adaptation of our current regulatory framework



1. Status report on the implementation of AW in FR State

AW EVOLUTION FRAMEWORK PHILISOPHY

1. Adapt AW regulatory framework to provide derogation options to operating services
2. Gradually build up skills and gain maturity to implement « adapted/proportionate » AW
3. Develop our networks with industries, civil aviation, and with our international partners



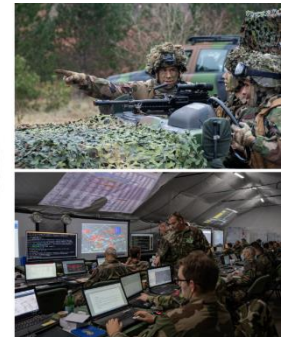
Training

National
surveillance



Operational
training

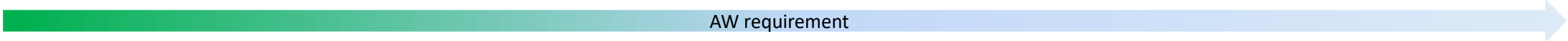
Crisis
management



HI conflict



AW requirement



1. Status report on the implementation of AW in FR State

EXISTING TOOLS

→ Article 10 Decree 2013-367

- Exemption from AW requirements in the event of exceptional circumstances or urgent operational needs
- Authorised by the Operating Organisations or the Chief of Staff of the Armed Forces
- Rarely used, given the very restrictive conditions of application ~ 50 per year



Medical evacuation in Libya - 2023

→ Military Permit To Fly Order « conditions »

- Authorised by the Operating Organisations
- Several cases :
 - MPTF for flight test when the Military Certificate of AW is revoked or outdated
 - MPTF for ferry flight on the main operating base of a A/C with a failure that cannot be repaired on site
 - MPTF for a deviation from the conditions laid down in the type certificate or in the continuing AW regulation
- Widely used but limited to very specific conditions of application ~ 300 per year

→ Heavy processes (high level of signature) adapted to specific cases only

SUMMARY

1. Status report on the implementation of AW in FR State

- 10 years after DSAÉ creation, achievement and perspectives

2. Fine tuning the AW, depending on the Battle rhythm

- Introduction of new regulatory tools to give more flexibility from training to operations

2. Fine tuning the AW, depending on the Battle rhythm

NEW ADAPTATIONS – More flexibility regarding industrial constraints

→ **Article 39** Order « Continuing Airworthiness »

NEW since
2021

- Allows to accept adaptations to the AW requirements in contracts
- Aim : to limit deviations with a tool to control them
- Example : for NH90 support, FR MAA authorizes industry to supply CoC instead of FORM1 until 2024 i.e. until all the manufacturers concerned have obtained approval

→ **Article 32-1** Order « Continuing Airworthiness »

NEW since
2022

- Regulatory article to accept « legacy* » spare parts, with CoC instead of FORM1
- Aim : to regularize massively spare parts delivered without FORM1 for contracts signed after 2013 and before 2019
- Example : useful for legacy fleets, like Alphajet

* Delivered before the end of December 2024





2. Fine tuning the AW, depending on the Battle rhythm

NEW ADAPTATIONS – Providing more autonomy at Force Commander's level

→ **Military Permit To Fly** Order « conditions »

NEW since
2022

- Regulatory process to keep flying with some « low criticality » technical failures
- Aim : to give flexibility and autonomy to the Commander
- Example : Rafale in operation – fitting a MIDS wiring connector without prior microwave testing because of the lack of the tool
 - Authorization to fly 15days before the connector replacement and microwave testing



→ **Provisional authorization by anticipation** DSAÉ note

On trial

- Regulatory process to keep flying pending the validation of the technical authority
- Aim : to give flexibility and autonomy to the Commander
- Example : TTH in operation – interference between air-conditioning pipework and hydraulic connection
 - Request to apply by anticipation an RDAS pending technical authority approbation.
 - Time between request and issue <4h



2. Fine tuning the AW, depending on the Battle rhythm

NEW ADAPTATIONS – implement « adapted/proportionate » AW

→ Define critical spare parts on C130H DGA technical act

NEW since
2023

- Reduce the oversight perimeter, based on a risk analysis by the TCH
- Aim : limit the burden and the requirement to the need; in HI conflict, be able to focus on the essential spare parts;
- Example : C130H critical spare parts = 2 000 vs 60 000 parts in total



→ Reduce the perimeter of organization approval Armed forces Ministry approval

To be
followed

- Make the holder of the support contract accountable to its subcontractors without approving them
- Aim : reduce the cost of introducing airworthiness for mature fleets
- Example : Mirage 2000 - Dassault



2. Fine tuning the AW, depending on the Battle rhythm

Develop our networks with industries, civil aviation, and with our international partners

- Support all new projects where interaction between the **military and the civil aviation** is increasing
 - Example : new fleet like H160, AVSIMAR (pooling and sharing)

- Find additional levers through **mutual recognition**, between MAA but also between Operating Organization, in order to develop real interoperability of forces in the field of maintenance
 - X-maintenance/ X-servicing
 - Mutual support of spare parts

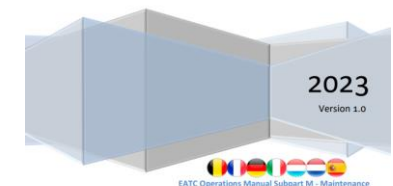


Integrated, Innovative, Effective
European Air Transport Command



EATC Cross-Maintenance
Operations Manual (EXOM)

A400M Aircraft
EATC, Functional Division



2. Adapting the AW in peace to war continuum

Prepare high intensity conflicts by considering the following themes (lessons learned from ORIONIS exercice 2023) :

- MILITARY-INDUSTRIALS TASK FORCES
- COMBAT DAMAGE REPAIR (materials sets / skills)
- DESIGN OFFICES TRAINING (« out of the box » solutions)
- MAINTENANCE PROGRAMS (margins / return to normal)
- FLEXIBLE CONTRACTS



- Joint TTX
- 7 fleet (Rafale, A400M, CN235, C130H, AWACS, MRTT, MAMBA...)
- 7 Task Forces (Dassault, Airbus, SABENA, MBDA, Safran ...)

26 study cases :

- combat damages
- major failures
- maintenance program excess
- spare parts exchanges



**MINISTÈRE
DES ARMÉES**

*Liberté
Égalité
Fraternité*

**Direction de la sécurité
aéronautique d'État**

