Transforming Military Aerospace Medicine in Germany

The New Center for Aerospace Medicine of the German Air Force

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Overview

- Context
- Goals
- Methods
- Results
- Discussion
Opinions stated in the following presentation do not represent official German Air Force policy.
The presenter has no conflict of interests to declare.
Context
Trends in society and politics

- Demographic change
  - Proportion of age groups relevant for recruitment is decreasing
  - Competition for talents with civilian sector increasing
- Political decision to suspend compulsory military service
- Political goal to reduce federal budgetary deficit to 0 €
- Adjustment to new scenarios from post-cold-war to international operations and volatile future developments
Trends in society and politics

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Political decision for a major re-organization

- Entire German military (Armed Forces and administration)
- Top-down, starting with the ministry itself and major HQs
- Adjustment to resources (both “n” and “$/€”) available
- Keeping a broad variety of capabilities more important than temporal sustainment (= numbers)
Consequences for Military Aviation

- Reduction of flying units and aircraft / weapon systems
  - Air Force: From 11 to 7 wings (or equivalent)
  - Army Aviation: From 6 to 3 regiments
- Extension of multi-role capabilities
  - Eurofighter in air-to-air, air-to-ground, and recce role
  - Airbus as transport, StratAirMedEvac, tanker role
Despite reduced numbers, all capabilities have to be maintained and provided continually

- Selection (psychology, clinical aviation medicine)
- Regular and event related re-evaluation (medicine/psychology)
Mission for Military Aviation Medicine

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- Regular and event related re-evaluation (medicine/psychology)
- Physiology training ($G_z$, altitude, orientation, night vision)
- Accident investigation and prevention
- Scientific research, development, and testing of equipment
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- Physiology training ($G_z$, altitude, orientation, night vision)
- Accident investigation and prevention
- Scientific research, development, and testing of equipment
- Training of flight surgeons and technicians, quality management
- Command, control, supervision of flight surgeons
Starting Point: Number of Levels and Structures

Head of Army AvMed

Head of Navy AvMed

Command Flight Surgeon AF

Surgeon General AF

Institute of Aviation Medicine

Research / Training

Clinical Medicine

Accident Investigation

Aviation Psychology

Ergonomics

Aviation Physiology
Starting Point: Complexity of Relations

Surgeon General AF

Command Flight Surgeon AF

Institute of Aviation Medicine

- HQ
- Research / Training
- Clinical Medicine
- Accident Investigation
- Aviation Psychology
- Ergonomics
- Aviation Physiology

15 May 2013
Unrestricted
Goals for Military Aviation Medicine

- Maintain contribution of aviation medicine to flight safety and mission success with ...
  - High level of quality
  - Total spectrum of capabilities
  - Entire variety of skills and professional expertise
Goals for military aviation medicine

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   → High level of quality
   → Total spectrum of capabilities
   → Entire variety of skills and professional expertise

→ Contribute to the Air Forces´efforts ...
   → to reduce staff
   → to reduce levels of hierarchy
   → to concentrate command/control and execution of tasks
   → to combine responsibilities and capabilities
Methods
Methods

- Centralization and reduction of complexity
- Co-operation with external partners
Centralization

- **Geographical relocation:** From 4 locations in Germany to Cologne
  - 1 exemption remaining

- **Centralization of tasks** in organizational units with related responsibilities and capabilities
  - Concentration of similar and related tasks in organizational units
  - Concentration of responsibilities for both rule-making, planning, development, c2, supervision, and capabilities for the execution of tasks

15 May 2013 Unrestricted
Most elements move to Cologne 2013-2016

Simulation center (human centrifuge etc.) Koenigsbrueck will follow later
Geographical Relocation

Military customers and partners
EASA
Universities
Civilian Institute of Aerospace Medicine of DLR

Cologne
Reduction of Complexity

Fusion of organizational structures:
- Surgeon General (SG) with offices’ divisions
- Institute of Aviation Medicine (IAM) with its divisions
- Offices of Command Flight Surgeons
- HQ elements of both SG and IAM
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Reduction of levels of hierarchy
- Command flight surgeons of 2 levels
- Director of IAM
Organizational Solution: AF Center Aerospace Medicine

Surgeon General of the Air Force / Director of the Center Aerospace Medicine German AF

HQ

Deputy SG / Scientific Coordinator / (C/S)

Division R&D
Scientific Research, Physiology, Ergonomics, Accident Analysis and Prevention

Division Assessment
Selection and re-evaluation, Av Psychology, Clinical Av Medicine

Division Operations in Av Medicine
C2, Supervision, Quality Management, Training, AirMedEvac
Co-operation with Partners

Surgeon General of the Air Force / Director of the Center Aerospace Medicine German AF

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External Partners

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Co-operation with External Partners

 Division Ergonomics of the Central Institute of the Centralized Medical Service (Koblenz)
   - e. g. climate physiology, altitude physiology

 Central Military Hospital (Koblenz)
   - e. g. magnetic resonance tomography imaging
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- Central Military Hospital (Koblenz)
  - e. g. magnetic resonance tomography imaging
- Universities of Wuppertal, Cologne, and Bonn
  - University level training in aviation medicine and aviation psychology, research projects, support of young scientists
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- Institute for Aerospace Medicine of the German Center for Air and Space (DLR)
  - Main partner for intensified co-operation
Co-operation: Institute for Aerospace Medicine of DLR

Co-operation by legal contract
- Inter department co-operation between different branches of German federal administration
Co-operation: Institute for Aerospace Medicine of DLR

Co-operation by legal contract
- Inter department co-operation between different branches of German federal administration

Construction of a common building
- Divisions I and II of AF center aerospace medicine
- AeMC of DLR’s institute for aerospace medicine
- DLR campus (neighbouring AFB at Cologne airport)
- Co-financed by Ministry of Defense and DLR (8:1)
Pooling and sharing of equipment and staff

- MRT: Equipment DLR, staff AF
- Clinical laboratory
- Specialties of clinical aviation medicine
Co-operation: Institute for Aerospace Medicine of DLR

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- Co-operation in research projects
  - Fatigue
  - UAS-operators
  - Stress and strain of pilots
  - Flying and medication
Co-operation: Institute for Aerospace Medicine of DLR

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Further development of training and methods
- Masters’ courses in aerospace medicine and psychology
- Assessment of work stations (cockpit and ground based)
- Selection of aerospace professionals
Results
Results

 Establishment of a new, leaner, more efficient organization
Results

❖ Establishment of a new, leaner, more efficient organization
❖ Preservation of all previously established capabilities in the entire field of expertise
❖ Maintenance of full spectrum aeromedical service for the German Air Force
Results

- Establishment of a new, leaner, more efficient organization
- Preservation of all previously established capabilities in the entire field of expertise
- Maintenance of full spectrum aeromedical service for the German Air Force
- Foundation of a civilian-military virtual organization (with strong real world links) as „the“ national center of aerospace medicine in Germany
Discussion
Virtual institution of organizationally independent entities
Virtual institution of organizationally independent entities

Broader spectrum of competence
- From military fast jet acceleration physiology over clinical aviation medicine and simulation based selection methods to space biology

Increased efficiency
- Sharing of infrastructure and equipment
- Co-operation in future procurement of equipment
Virtual institution of organizationally independent entities

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Development of common label
- German Aerospace Medicine Cologne

Partner for international co-operation
The End