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Ramstein Aerospace Medicine Summit
2019 NATO/STO Technical Course

HPE –
a bi- national approach at the
German/French army aviation training center TIGER

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B EGL – Base école General Lejay



Airborne Weapon Systems EFA

KH Tiger, HAD & HAP



Challenging characteristics of modern airborne weapon systems

Basics:

Flying personnel:

- Low number of staff, not regenerable
- Highest demands on physical and mental fitness and maintaining these levels

Demands on physical and mental fitness of the weapon system attack helicopter Tiger:

- Tandem cockpit
- Spatial narrowness (compared to a Bo 105)
- Typical for helicopters: vibrations, flicker lights, seats, etc
- KH/HAD/HAP Tiger/tigre are complex system
- Attack helicopter
- **Helmet:** basic helmet + mounted IHS (integrated helmet system) 2.3 kg

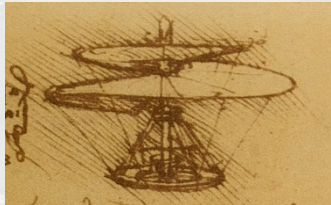
Aeromedical problems:

- **Spinal column musculoskeletal system, especially cervical and lower spine**
- **Flight psychological stress**
- **Cognitive performance**
- **Enhancement/maintenance of psychological and physical fitness + motivation**
- **Crews don't want to lose their flight crew license - honesty**

Human Performance Enhancement



System Performance

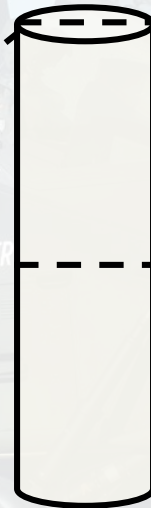


RW

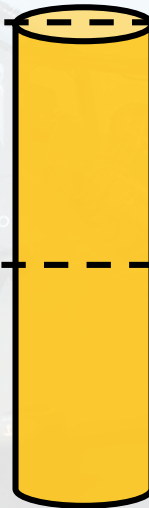


Pilot

human limitations



RW



Pilot

Human Performance Enhancement

figure according to LTC Dr. R. Nüsse modified for KH Tiger

HPE

HPE? Salutogenesis? Prevention? Treatment?

HPE:

- part of a zero loss strategy to prevent any loss due to medical problems
- to prevent illness and injuries and maintain health
- to improve the performance of our pilots
- because nowadays the human factor is the limitation and not the aircraft

Salutogenesis:

- Emergence of health

Prevention/treatment levels:

- Primary prevention: healthy people, sustainment of health and prevention of illness
- Secondary prevention: sick people with no or few symptoms, early detection or prevention of the progression of an illness
- Tertiary prevention: prevention of an illness progression or it's complications of a manifest disease, secondary disease, worsening of chronic diseases

HPE personnel GER/FR

- On site:
 - 1 flight surgeon GER
 - 1 physiotherapist GER
- Temporary support:
 - assigned flight psychologist GER
 - students of sport science (bachelor) GER
 - students of psychology (bachelor) GER
 - Manual therapist/Ostéopathe (D.O.)FR

HPE infrastructure



2017

HPE trainings



National training:

- Establishment of group trainings conducted by physiotherapist or flight surgeon on a regular base every Friday
- Regular Individual treatments / trainings conducted by physiotherapist
- Group or individual trainings conducted by sport scientists if they are available
- Lectures held by psychologists

Bi-national

- Individual physiotherapist sessions for some French pilots
- Kick off lecture about HPE with a new pilot student course
- Next step: participation of French pilots in group training

HPE bi - national

Bi- Nationality:

- bi- national training center (FR/GER)
- Establishment of a GER- FR HPE Team (flight surgeon, physiotherapist, psychologist, manual therapist, sport scientist)
- First steps to establish German and French training groups (flight students) and lectures about training, active everyday life, nutrition, Chrono hygiene , etc
- Training handbook

Bi-national problems

- Thinking of the old days “we don't need it” on both sides
- Infrastructure
- Equipment
- Time



Questions?



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