COMPREHENSIVE MENTAL HEALTH ASSESSMENTS

The aim of the Comprehensive Mental Health Assessment is to identify deficits in performance and personality dimensions relevant to aviation.
This shall be done in analogy to the "Manual for Aviation Psychological Examination" of the AAPA, according to which

- in the case of questions regarding aviation-specific performance, test results are satisfactory if the candidate to be examined exceeds a percentile rank (PR) of 33 in each relevant dimension of the test procedures. If the test results are in the range between PR 17 and PR 33, the aviation psychologist shall assess if the candidate has sufficient compensation mechanisms~~,~~ at his disposal.
- a DEFICIT (below average result) is defined by a percentile rank "or below 16 percent". (According to "Kubinger, K.D. (2009). Psychologische Diagnostik. Theorie und Praxis psychologischen Diagnostizierens (*Psychological Diagnostics, Theory and Practice of Psychological Diagnosis*). Page 72. Hogrefe Verlag" the average range is defined from percentile rank (PR) =16 to PR =84).

The Comprehensive Mental Health Assessment includes, a detailed aviation psychological exploration a behavioural observation, and at a minimum, a review of the listed performance dimensions.

Performance dimensions

Performance dimension "(education-independent) intelligence"

The ability to "bring order to chaos", to find creative solutions even in new situations, to gain an overview in unfamiliar situations and to derive rules.

Test procedure: Matrix test e.g. Ravens Standard Progressive Matrices, Advanced Progressive Matrices etc.

> *Captures deductive reasoning as an indicator of general intelligence. The ability to recognise general rules and to draw logical conclusions is a very good predictor of long-term professional success. This special intelligence test offers the possibility of screening in the upper and lower performance range as well as clarifying questions of traffic psychology. Therefore, it is successfully used in personnel psychology as well as in clinical and traffic psychology examinations.*

Performance dimension "Alertness/Concentration"

The ability to concentrate on a limited task or stimuli.

Test procedure: e.g. COGNITRONE, d2, ZVT

> *These abilities greatly influence a person's performance in both everyday and demanding activities. Due to its high practical relevance, this test is used in clinical neuropsychology as well as for aptitude testing of personnel with safety-relevant requirements (Safety Assessments) and for traffic or sports psychology examinations.*

Performance dimension "Memory"

The ability to retain, organise and recall acquired information.
A disturbance of the working or short-term memory should be ruled out.

Test procedure: e.g. CORSI

Measures the memory capacity of the spatial working memory.
The block tapping test is considered the gold standard for testing spatial memory span. For more than three decades, this test has found multiple confirmation of its validity in the neuropsychological literature as well as widespread use in clinical contexts. The test is frequently used in developmental psychological examinations because it has proven to be a good predictor of the development of cognitive functions and specific differences between backward and forward block span can be identified in the test. It is also used in expert examinations for complaint validation.

Performance dimension "Long-term attentional performance" or "VIGILANCE"

The ability to remain focused and attentive over an extended period of time and to distinguish relevant stimuli from irrelevant ones.
The ability to maintain alertness in the face of monotonous stimulus frequency, even during long-term exposure.

Test procedure: e.g. signal detection, VIGILANZ, DAUF, Cambridge Watchclock

Captures the long-term focused alertness performance and visual differentiation performance of a relevant signal in the presence of interfering signals.
Signal detection theory describes the perception of weak signals against a constantly changing background. It starts from the following question: Under what conditions is the presence of a weak signal detected against a background of interfering signals or against other signals that may occasionally be confused with the relevant signal? The test procedure is mainly used in personnel psychology (Safety Assessments in the field of aviation psychology), clinical neuropsychology as well as in sports psychology. In the clinical context, the identification of deficits, such as those that occur in connection with neglect, is of interest.

When carrying out certain monotonous activities, people do not always receive the appropriate wake-up impulses, which leads to mental fatigue and thus to a decrease in performance efficiency. In this context, the concept of overload through underload arose. The ability to maintain attention or sustained alertness in low-stimulus situations is often relevant in occupations with safety-relevant requirements and is thus tested in Safety Assessments as well as in traffic psychology examinations. Furthermore, the test is used in sports psychology, but also in clinical neuropsychology, as various neurological or mental illnesses have an impact on attention.

Assessment of personality and mental health / freedom from symptoms

An assessment of the personality as “fit” for a job in a cockpit environment shall be carried out by means of a detailed **aviation psychological exploration interview**. The **behavioural observation shall be documented**.
In addition to general biographical data, in accordance with the "Manual for Aviation Psychological Examination", dimensions relevant to the assessment shall be investigated, including social sense of responsibility, willingness to take risks, self-control, psychological stability, readiness to act aggressively, adaptation to rules, resilience, stress management and stress tolerance of the applicant.

Personality procedures or clinical questionnaires can be utilized to answer the questions and may be used as well.

Additional appropriate evaluation tools, personality questionnaires or clinical questionnaires may also be used to augment the evaluation or to get a more precise assessment of an applicant as may be deemed necessary. The selection of the respective test procedures is to be determined by the aviation psychologist performing the investigation.