



EASA.CAT.GEN.MPA.175(b)

**HOW SYMBIOTICS COVERS
THE REQUIREMENTS**



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EXECUTIVE SUMMARY

The EASA regulatory change announced in July 2018 and due to be implemented in early 2021, EASA.CAT. GEN. MPA.175(b), arose from some of the recommendations made in the BEA report following Germanwings 9525. The regulation includes a requirement for all pilots to have completed a psychological profile within 24 months prior to commencing line flying.

This document aims to lay out how Symbiotics can apply considerable experience and expertise in the assessment of pilots, to assist

their clients with meeting the regulation by investigating the specific ADAPT assessments: Advanced Personality Questionnaire, Crew Resource Management, Cognitive Reasoning and FAST and how they can be combined to assist an airline in meeting the new EASA regulation CAT.GEN.MPA.175(b).



1. INTRODUCTION

The Germanwings Flight 9525 accident in March 2015 and the finding that it was deliberately caused by the First Officer Andreas Lubitz, led to an early response across several aviation authorities to introduce a rule requiring two authorised personnel to be on the flight deck at all times. Three days after the incident, EASA issued a temporary recommendation for airlines to ensure that at least two crew members—including at least one pilot—were in the cockpit for the entire duration of the flight. Several airlines announced that they had already adopted similar policies voluntarily. The British Psychological Society issued a statement offering to provide expert support in psychological testing and monitoring of pilots. The European Federation of Psychologists' Associations issued a statement supporting psychological testing in the selection of pilots, but also stated it could not forecast the life events and mental health problems of individual pilots, nor could it predict the unique ways pilots would cope with these.

EASA subsequently convened a number of meetings with medical and psychological experts to look at possible ways to address the root cause of the problem, the mental fitness of the pilot, rather than actions to be taken to try and prevent an individual taking deliberate action to endanger an aircraft. In August 2016 EASA published its initial response which included a number of measures to be taken by airlines. These covered

- strengthening the initial and recurrent medical examination of pilots, by including drugs and alcohol screening, comprehensive mental health assessment, as well as improved follow-up in case of medical history of psychiatric conditions;
- increasing the quality of aero-medical examinations, by improving the training, oversight and assessment of aero-medical examiners;
- preventing fraud attempts, by requiring aero-medical centres and AMEs to report all incomplete medical assessments to the competent authority.

In December 2016 ([Opinion 14/2016](#)) was presented to the EU Commission, this turned the recommendations into a clear set of requirements. The proposals

included the following new requirements:

- Ensuring that all pilots have access to a support programme;
- Mandating airlines to perform a psychological assessment of pilots before the start of employment;
- Introducing systematic Drug & Alcohol (D&A) testing of flight and cabin crew upon employment, after a serious incident or accident, with due cause (i.e. following reasonable suspicion), as well as
- Unannounced D&A testing after rehabilitation and return to work;
- As an additional safety barrier for airlines which are not already subject to a national programme for psychoactive substance testing: mandatory random alcohol screening of flight and cabin crew within the [EU RAMP inspection programme](#).

In July 2018 EASA published the new safety rules, and gave a two-year transition period for airlines to ready themselves for the implementation, which takes effect in early 2021. These regulations cover:

- Support programme: all pilots working for European airlines will have access to a support programme that will assist and support pilots in recognising, coping with, and overcoming problems which might negatively affect their ability to safely exercise the privileges of their licence.
- Alcohol testing: as an additional safety barrier, alcohol testing of pilots and cabin crew for all European and foreign airlines who fly into the territories of the European Union, has been added. Alcohol testing is already a well-established practice in some Member States and with this Regulation alcohol testing will now be extended to all EU Member States.
- Psychological assessment: European airlines will perform a psychological assessment of their pilots before the start of employment.

2. ADAPT OVERVIEW

Symbiotics are a human performance organisation with expertise in high-risk, high-consequence industries and have provided assessment, selection

and consultancy services to 80 countries across 5 continents, working with airlines, air forces, business jet operators and flight training organisations.

Our online selection and assessment tool, ADAPT, provides an easy to use software interface for pilot aptitude testing, with comprehensive reporting across all our assessments. We offer a range of aptitude tests, assessments and services, including bespoke test design, that are designed to measure competence across all levels of candidates. ADAPT offers a detailed breakdown of candidates and their suitability for the training or operational pipeline, providing a prediction of how the candidate may perform in a specific organisational or training culture to support operators in making informed hiring decisions. Within ADAPT we offer tests that cover the requirements specified for the psychological profiling of pilots before employment.

3. EASA.CAT.GEN.MPA.175

3.1 EASA.CAT.GEN.MPA.175(B) ENDANGERING SAFETY

The EASA Acceptable Means of Compliance (AMC) and Guidance Material (GM) (March 2019) gives the following guidance:

AMC: PSYCHOLOGICAL ASSESSMENT

(a) The psychological assessment should be:

(1) appropriate to the particularity, the complexity and the challenges of the operational environment that the flight crew is likely to be exposed to, as defined by a job analysis identifying the safety-critical dimensions related to the flight crew's function and role within the operator and should include at least the following assessment criteria:

- (i) cognitive abilities;
- (ii) personality traits;
- (iii) operational and professional competencies; and
- (iv) social competences in accordance with crew resource management principles;

(2) validated and either directly performed or overseen by a psychologist with acquired knowledge in aviation relevant to the flight crew's operating environment and with expertise in psychological assessment, and where possible, the psychological selection of aviation personnel; and

(3) undertaken at least within the past 24 months before commencing line flying, unless the operator can demonstrate that the psychological assessment undertaken more than 24 months ago is still adequate for the risk mitigation as required by ORO.GEN.200(a) (3). Such a demonstration should be based on the tests previously performed, an updated risk assessment based on data gathered from previous operational experience and continuous human performance monitoring since the last psychological assessment.

(b) As regards the psychological assessment, the following should be documented:

- (1) the procedures followed;
- (2) the personnel involved;
- (3) the assessment criteria and instruments used in the assessment; and
- (4) the validity period.

3.2 EASA.CAT.GEN.MPA.175(C) ENDANGERING SAFETY

Further guidance is provided for smaller operators in section c:

INTERNAL ASSESSMENT FOR NON-COMPLEX OPERATORS

(a) An operator may replace the psychological assessment with an internal assessment of the psychological attributes and suitability of the flight crew, if the operator is considered to be a non-complex operator, i.e. when it has a workforce of 20 full-time equivalents (FTEs) or less, that are involved in an activity subject to Regulation (EU) 2018/1139 and its implementing rules.

(b) The internal assessment for non-complex operators should as far as possible apply the same

principles as the psychological assessment before commencing line flying for complex operators.

3.3 EFFECTIVE COMPLIANCE

To comply with the requirements, it is necessary to understand them. The regulations are vague in definition, though the Guidance Material adds some explanation:

GUIDANCE ON CONDUCTING A PSYCHOLOGICAL ASSESSMENT

(a) A psychological assessment performed by one operator may subsequently be accepted by a different operator, provided that the latter is satisfied that the assessment has been performed in accordance with AMC1 EASA.CAT.GEN.MPA.175(b).

(b) A psychological assessment conducted by or on behalf of an operator should not be considered or conducted as a clinical psychological evaluation.

(c) When establishing the policy on psychological assessment of flight crews, the operator may refer to recognised industry standards and best practices in the field of pilot selection, aptitude testing and psychological assessment such as:

- (1) IATA 'Guidance Material and Best Practices for Pilot Aptitude Testing'; and
- (2) national or European standards of ethical codes of conduct when conducting a psychological assessment, such as by national or European associations for (aviation) psychology.

UK-based airlines, for example, would refer to the British Psychological Society's Standards for Assessment Centres, there being (at present) no UK association for Aviation Psychology.

Taking each step of the AMC in turn, the Cognitive Abilities; Personality Traits; Operational and Professional Competencies; and Social Competences in accordance with Crew Resource Management principles are well described in the IATA Guidance Material for Best Practices in Pilot Aptitude Testing (3rd Ed, April 2019), and the Measured Dimensions



and Testing Instruments outlined by IATA are shown here.

1

BASIC MENTAL ABILITIES

Components are:

Memory capacity

Speed and accuracy of information processing (perception, classification, transformation)

Spatial abilities (static)

Technical comprehension

Reasoning (information processing with basic figures)

Logic abilities

Long-term concentration

2

COMPOSITE MENTAL ABILITIES

Components are:

Allocation of attention

Multi-tasking (different tasks combined)

Psycho motor abilities (pursuit tracking; compensatory tracking)

Spatial abilities (dynamic)

Note: These dimensions are related to aeroplane flight path management, manual control and automation.

3

OPERATIONAL ABILITIES

Components are:

Problem solving and decision-making

Workload management

Situation awareness

Management of information

4

SOCIAL-INTERPERSONAL ABILITIES

Components are:

Communication

Leadership

Teamwork

5

PERSONALITY TRAITS

Components are:

Professionalism (professional motivation, self-discipline, self-criticism, self-organization, safety motivation, stress-coping with social confrontation, information load, time pressure)

Application of procedures

Compliance with regulations



EASA.CAT.GEN.MPA.175(b) - How Symbiotics covers the requirements.

The different assessment components that can be used as part of the bespoke ADAPT process are designed to facilitate measurement of the dimensions above. The table below shows some of the commonly

used ADAPT tests, how these address the ICAO pilot competencies and how completion of these ADAPT tests can cover the stipulated criteria to meet compliance with EASA.CAT.GEN.MPA.175(b).

ASSESSMENT	1. BASIC MENTAL ABILITIES	2. COMPOSITE MENTAL ABILITIES	3. OPERATIONAL ABILITIES	4. SOCIO-INTERPERSONAL SKILLS	5. PERSONALITY TRAITS
PERSONALITY QUESTIONNAIRE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
CREW RESOURCE MANAGEMENT	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
COGNITIVE REASONING	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FAST	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

PERSONALITY QUESTIONNAIRE	CREW RESOURCE MANAGEMENT	COGNITIVE REASONING	FAST
Leadership Teamwork Professionalism Motivation Self-discipline Self-organisation Safety motivation Stress coping Application of procedures Compliance with regulations	Decision making Workload management Situation awareness Leadership Teamwork Social confrontation Coping with time pressure	Information processing Spatial abilities Reasoning Logic	Information processing Spatial abilities Reasoning Logic Concentration Allocation of attention Multitasking Psycho-motor abilities Spatial abilities Situation awareness Information management

Table 1: Measurement of ICAO competencies by ADAPT

3.4 EFFICIENCY

A comprehensive assessment of all the attributes listed in the AMC can be accomplished with a combination of the ADAPT tests. However, information gathered from other sources can be used to assess some elements, for example SIM tests or interviews as part of the selection process. We would recommend that where supplementary information is included, a personality questionnaire, preferably one developed for the aviation sector and with appropriate norm groups, should be used. If a fully online solution to meeting the regulation is required, the ADAPT suite of ADAPT personality questionnaire, Crew Resource Management, Cognitive Reasoning and FAST covers the fundamentals of each of the elements specified in the regulations.

The standardised nature of aptitude testing can ensure the process is more robust and consistent, reducing any opportunity for differential treatment. The ADAPT test battery has been developed with input from relevant specialists in aviation and psychological testing. Where interviewing is used as part of the assessment process, Symbiotics implements formalised interview methodology with standardised scoring criteria, as research suggests that selection interviews that are structured and linked to the appropriate competencies have high predictive validity and reliability (McDaniel et al, 1994).

3.5 PERSONNEL TO BE INVOLVED IN PSYCHOLOGICAL ASSESSMENT

The regulation requires the assessment to be validated and either directly performed or overseen by a psychologist. In the UK psychologists are regulated by the Health and Care Professions Council (HCPC). There are several protected 'titles' which do not include the title 'Psychologist' without a specialism. Aviation Psychology is not (yet) a regulated profession. Using a protected title without being HCPC registered is a criminal offence. Occupational and Clinical are the two, relevant, titles for this regulation.

The European Association of Aviation Psychologists requires their members to have an MSc in Psychology, and the relevant aviation experience. However, this does not necessarily mean that a Member of EAAP is

able to practice legally in the UK.

This has caused concern for the UK CAA, who need to ensure that those psychologists involved in meeting the requirements of CAT GEN MPA 175(b) are appropriately experienced and qualified.

Airlines in the UK should, therefore, be looking for partners who are:

- Chartered Members of the British Psychological Society (CPsychol suffix)
- Registered with HCPC – shown by use of Clinical or Occupational title
- Experienced in assessment – the person conducting or overseeing the assessment should hold BPS TUO-A and TUO-P certification (Test User Occupational, Ability or Personality respectively)
- Have acquired aviation knowledge generally recognised as a minimum of three years' experience. Ideally this should include the psychological assessment of aviation personnel.

Symbiotics' psychologists all hold the TUO-A and TUO-P certificates, and have a minimum of three years' experience in the aviation sector. The team is led by our Principal Occupational Psychologist who is a Chartered Occupational Psychologist, registered with HCPC, an Associate Fellow of the British Psychological Society, an Associate Member of the European Association of Aviation Psychologists, a Member of the Royal Aeronautical Society, and holds the highest level of assessment accreditation in the UK, the BPS Specialist in Test Use, Occupational certificate.

All ADAPT test development has been appropriately supervised, and a requirement of the use of our ADAPT personality questionnaire is that anyone involved in interpreting the profiles is appropriately trained and certified in report interpretation. Our team are always available to help clients to interpret and understand assessment results.

3.6 GM1 EASA.CAT.GEN.MPA.175(B)

Section b of the Guidance Material says that a psychological assessment conducted by or on behalf of an operator should not be considered or conducted as a clinical psychological evaluation.

This precludes the use of tools such as MMPI-2, which are used for clinical diagnosis. However, there are a number of different approaches that allow the operator to gain an insight to the candidate's current state of mind. It should be noted that a personality assessment does not give an indication of the candidate's mental health. Personality traits are stable over time, whereas mental health fluctuates from day to day or even hour to hour. Personality profiles can indicate an individual's inherent level of resilience and mental toughness, but not how they are coping with the stressors they are experiencing at a particular time. Research shows that individuals with deteriorating mental health can hide their symptoms well, to the point where they are in need of clinical help.

ADAPT includes a mental health risk assessment tool, MindQ. This is derived from clinical assessments, but is a risk assessment not a diagnostic. It indicates the risk of an individual developing symptoms of mental illness and identifies the areas of stress that are impacting on them at the time. This allows appropriate support and advice can be given, to prevent deterioration to the point of poor mental health.

To be effective, MindQ should be administered 2 to 3 times a year, with feedback provided by a psychologist. Any individual reporting high risk of Anxiety or Depression may be identified to the AOC for public safety. All other reports are confidential.

3.7 QUALITY ASSURANCE

The AMC states that the procedures followed and the personnel involved with the psychological assessment must be documented, as must the assessment criteria and the instruments used, and the validity period. Although the responsibility for this process lies with the airline or training organisation, through the ADAPT online client portal data pertaining to the candidate's assessment can be easily accessed and downloaded to support the company in maintaining this information for their records.

4. LEGAL ASPECTS OF PSYCHOLOGICAL TESTING

As stated by IATA, the selection of suitable candidates requires discrimination between applicants. While standards for medical fitness, English language proficiency and ability to understand course content have long been in place, regulators have been more reluctant to develop standards regarding personality criteria. However, if the standards for personality criteria are directly relevant to the job, this discrimination can be considered justifiable; recent changes to the EASA regulations require all pilots to have a psychological assessment before they commence line flying (EU, 2018). The ADAPT Advanced Personality Questionnaire (APQ) meets these requirements, identifying the psychological attributes and suitability of the pilot to the work environment to reduce the likelihood of negative interference with the safe operation of the aircraft.

The APQ utilises reliable and well-validated psychological concepts that are relevant to the aviation sector, such as the Big Five Factor model of personality and the five hazardous attitudes as defined by the FAA. Scoring within ADAPT is determined through statistical comparison of the candidate's results against a representative target population, ensuring a standardised methodology as well as providing a meaningful interpretation of scores relevant to the aviation context.

4.1 DATA PROTECTION AND PROFESSIONAL STANDARDS

Legislative frameworks exist worldwide relating to personal data privacy and protection; Symbiotics operate within the General Data Protection Regulation (EU, 2016) to ensure data is used fairly and responsibly.

In addition, Symbiotics are compliant with the Standard for the Design and Delivery of Assessment Centres laid out by the British Psychological Society’s Division of Occupational Psychology (BPS, 2015), as well as the International Organization for Standardization’s Standard for Assessment service delivery (ISO 10667)(ISO, 2011).

By conforming to these standards, Symbiotics ensures that the assessment process is fair, consistent and legally defensible and offers an evidence-based approach, meaning the criteria and methods used provide valid information to support selection decisions. Symbiotics have produced documentation as a guide to Clients on how these standards are implemented through our assessments.

5. ALCOHOL TESTING AND SUPPORT PROGRAMMES

5.1 ALCOHOL TESTING

Symbiotics have partnered with Odilia Clark, <https://odiliaclark.com> who provide a full service for drug and alcohol testing, from writing your policies to provision and analysis of approved tests.

5.2 PEER SUPPORT PROGRAMMES

Symbiotics have a number of partners who can provide assistance with your Peer Support Programmes, from

setting one up to providing the ongoing clinical advice and support. Please contact us with your specific requirements so that we can provide you with contact information.

6. CONCLUSION

The EASA regulation CAT.GEN.MPA.175 requires all pilots to undertake a psychological assessment within 24 months prior to commencing line flying. At Symbiotics we are proud to offer our expertise in developing and managing effective selection systems, and the high standards to which we adhere, to help airlines towards becoming compliant with the new EASA.CAT.GENMPA.175 (b) regulations. If a solely online solution is required, we recommend undertaking the following four ADAPT tests to gain an overall psychological assessment of your pilots: ADAPT Personality Questionnaire, Crew Resource Management, Cognitive Reasoning and FAST.

7. QUESTIONS

If you have any questions regarding any of our products or services, or anything discussed in this document, please don’t hesitate to get in touch with Symbiotics, who will be happy to assist in answering any queries you may have. Contact admin@symbioticsltd.com



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