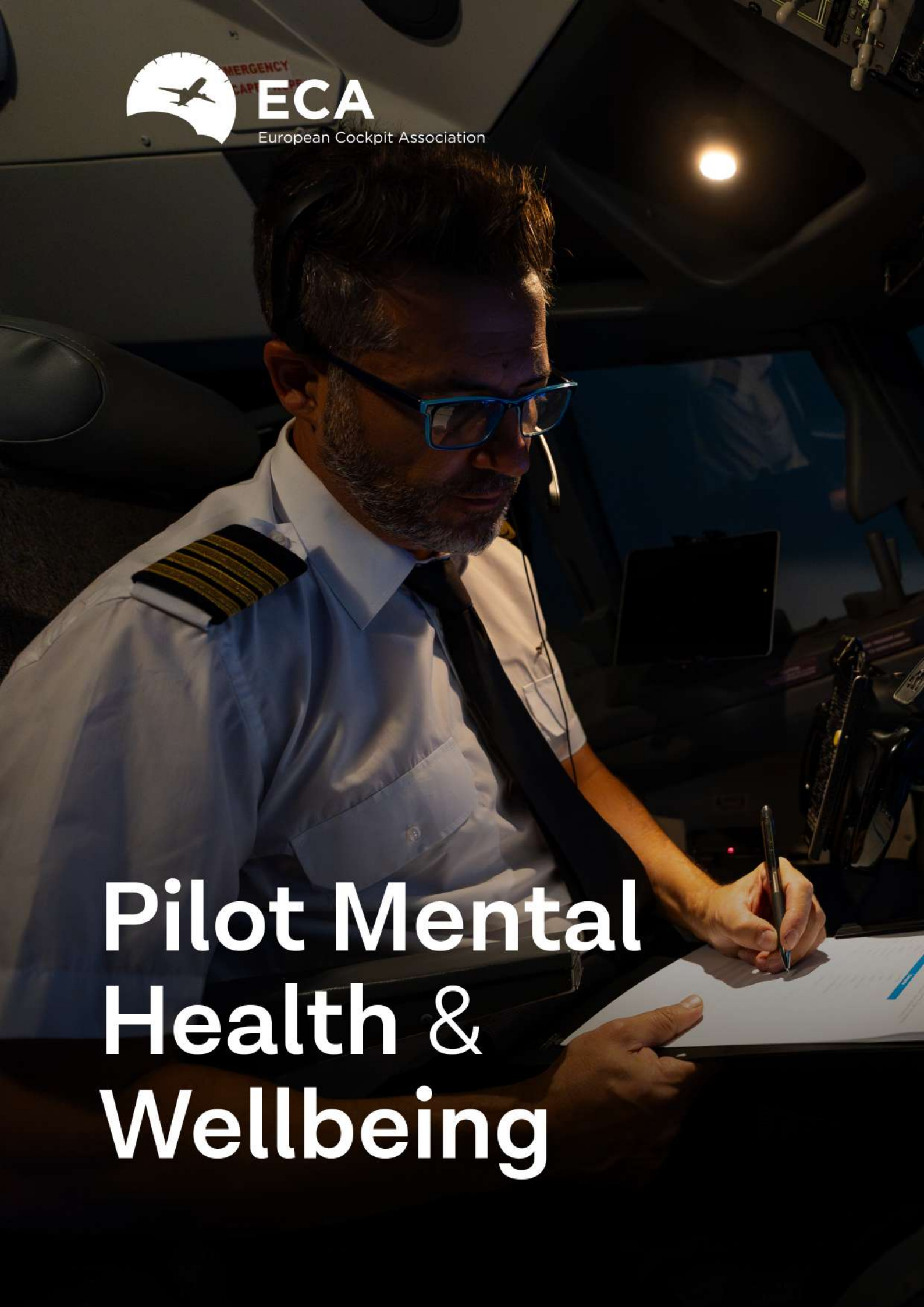

Pilot Mental Health & Wellbeing

This briefing leaflet provides additional context on pilot mental health and wellbeing. It is intended as an informational resource for pilots and policymakers seeking a clearer understanding of the key concepts and issues involved. It complements and further explains the positions set out in the ECA position paper on mental health.

Click here and access ECA Position Paper on Pilot Mental Health and Wellbeing.

Background

Since the Germanwings tragedy in 2015, mental health has moved from a largely private topic to a recognised element of aviation safety. In the years that followed, regulators, operators and pilot associations introduced new measures intended to detect risks and prevent recurrence.

While this shift has brought mental wellbeing into the open, many pilots still experience hesitation when it comes to seeking support. Concerns around license implications, income stability, confidentiality and career impact continue to shape decision-making. As a result, the conversation is now evolving from one focused on detection to one that must increasingly focus on prevention and sustainable support.

What has Changed Since 2015

A number of important developments have taken place across Europe. Peer Support Programmes have become more widespread and are now embedded in many airline environments. From a regulatory perspective, EASA CAT.GEN.MPA.215 requires operators to enable, facilitate and ensure access to a support programme for flight crew members. In addition, mental health considerations have entered the regulatory framework, and there is growing recognition that psychological wellbeing directly influences operational safety. The long-standing perception of pilots as being largely immune to mental strain has begun to shift, allowing for more open dialogue within the profession. These changes mark meaningful progress and reflect a broader understanding that mental health is part of human performance.

What Remains a Challenge

Significant barriers can negatively impact pilots' mental health and well-being. One of the most pressing concerns is the fear of license loss, which discourages pilots from disclosing difficulties or seeking professional help. Both the EASA MESAFE and FAA ARC study also showed that financial insecurity was one of the main factors behind the lack of pilots seeking help: insufficient sick leave compensation, limited loss-of-license insurance, and lack of alternative duties during recovery make treatment unaffordable or career-threatening.

Furthermore, the EASA regulation on mental health is inconsistently interpreted and enforced across Member States, leading to unequal treatment of pilots, resulting in mistrust. Seeking professional psychological support often triggers mandatory authority referrals, deterring pilots from accessing care. Excessive documentation and inconsistent application of regulations across EASA states further undermine fairness and trust.

Peer support programs (PSPs) have shown promise; however, they are endangered when treated as a "tick-the-box exercise". Their effectiveness is often undermined when they are not fully independent or when confidentiality is questioned, leaving many pilots reluctant to use them. Furthermore, some

operators do not implement dedicated PSPs at all, as current regulations only require the provision of support programmes, allowing considerable flexibility in how these obligations are met.

Moreover, the MESAFE study highlighted that routine use of mental health questionnaires are often ineffective as screening tools, lack validation for aviation use, and may encourage dishonesty, as pilots fear the consequences of disclosure. Medical certification currently relies on binary “fit/unfit” decisions, which fail to reflect the complexity of mental health, while complex cases are handled through unilateral decisions, leaving pilots vulnerable to inconsistent or unfair outcomes.

Equally concerning is the lack of attention to the systematic prevention of psychosocial harm (as outlined in ISO 45003) in aviation. Safety management systems focus primarily on physical, technical and operational hazards. While psychosocial risks such as fatigue, excessive workload, job insecurity, and toxic workplace cultures remain insufficiently addressed. Additionally, the current aviation sector lacks sufficient mental health expertise tailored to its unique operational realities. Psychological and psychiatric evaluations are often conducted by professionals without aviation-specific training, which can lead to misunderstandings, inconsistent assessments, and limited trust from pilots. Aeromedical Examiners (AMEs), while central to the certification process, frequently receive inadequate training in mental health assessment, leaving them ill-prepared to address sensitive issues constructively. There is no accredited pathway or certification for aviation psychologists, resulting in a shortage of qualified experts who can provide specialised care and support.

Cultural factors exacerbate these challenges: in many workplaces, seeking mental health support is still stigmatised, perceived as a sign of weakness, and discouraged by blame-driven or punitive organisational cultures. Such environments foster silence, stress, and fear, creating systemic obstacles to early intervention and open dialogue about mental health.

Together, these structural, regulatory, and cultural factors create an environment in which pilots’ mental health needs are insufficiently addressed, threatening both their wellbeing and aviation safety as a whole.

General Guiding Concepts

Safety II

A shift from “What went wrong?” to “What keeps things going right?”
Mental health policy must reinforce resilience and early support — not just detect pathology.

Salutogenesis

An approach to human health that examines the factors contributing to the promotion and maintenance of physical and mental wellbeing, rather than waiting for evidence of impairment before responding. Salutogenesis emphasises supporting the coping mechanisms of individuals which help preserve health despite stressful conditions.

Psychosocial Risk Management

Frameworks like ISO 45003 recognise that fatigue, workload, culture, and job insecurity are hazards.
Aviation Safety Management Systems focus heavily on technical and operational risks. Psychosocial hazards are still marginal.

Points of Concern

MIRAP – A New Approach to Mental Health Assessment in Aviation

The proposed Mental Incapacitation Risk Assessment Process (MIRAP) was developed within the EASA-funded MeSAFE (Mental Health for Aviation Safety) project. Its aim is to support aeromedical decision-making in cases involving mental health concerns by introducing a more structured and operationally focused approach to risk assessment. MIRAP uses the risk assessment matrix framework as applied elsewhere to aviation hazards.

Why was MIRAP developed?

Traditionally, aeromedical assessments have often relied on largely binary outcomes: a pilot is considered either fit or unfit to fly. While this approach may be appropriate in some situations, mental health and wellbeing rarely follow such a simple pattern.

Pilots, like all people, may experience periods of increased stress, life events, temporary mental health difficulties, or conditions that are effectively managed through treatment and support. The same diagnosis can have very different effects on different individuals and may not necessarily result in the same operational risk.

The MeSAFE project therefore explored whether mental health assessments could move beyond a diagnosis-focused approach and place greater emphasis on actual operational impact and risk.

What is MIRAP?

MIRAP is a structured decision-support process that aims to assess the potential impact of a mental health condition on safe flight operations. Rather than focusing solely on the presence or absence of a diagnosis, MIRAP seeks to identify potential Mental Incapacitation Events (MIEs).

These are situations in which mental health-related symptoms or impairments could affect the safe performance of operational duties.

Examples could include:

- significant concentration difficulties,
- severe fatigue related to sleep disturbance,
- panic symptoms,
- impaired judgement,
- medication side effects,
- impulsive behaviour,
- suicidal ideation, or
- other conditions that could affect operational performance.

The process then evaluates:

1. the severity of the potential event;
2. the likelihood of it occurring;
3. possible mitigation measures;
4. the remaining residual risk;
5. the appropriate aeromedical outcome and follow-up.

In this way, MIRAP applies a risk-management philosophy already familiar throughout aviation safety to mental health assessment.

Potential benefits of MIRAP

From a pilot perspective, one of the most significant potential advantages is the move away from an overly simplistic view that a diagnosis automatically determines fitness to fly.

By focusing on functional impact & operational risk, MIRAP may:

- support more individualised assessments;
- reduce unnecessary grounding; panic symptoms,
- facilitate structured return-to-duty pathways;
- recognise recovery and treatment progress;
- encourage consideration of mitigating factors;
- in complex cases, promote a multidisciplinary decision-making approach involving AMEs, Mental Health Specialists and operational experts and the pilot concerned.

This approach may better reflect the reality that mental health exists on a continuum and that many conditions are manageable, treatable and compatible with safe flight operations when appropriately assessed and monitored.

Potential concerns and open questions

While MIRAP offers a promising framework, several important questions remain.

First, MIRAP is not an objective algorithm. Severity and probability ratings ultimately depend on professional judgement, clinical interpretation and operational expertise. As with other risk-matrix approaches, there is a risk that classifications may appear more precise than the underlying evidence actually supports.

Second, consistency will be critical. If different authorities, AMEs or assessment teams interpret the same situation differently, pilots may experience uncertainty and inconsistent outcomes across Europe.

Third, transparency remains an important consideration. Pilots should be able to understand how decisions are reached, which factors were considered, what mitigation options were evaluated, and how conclusions can be reviewed if disagreements arise.

Perhaps most importantly, MIRAP can only be effective if pilots feel able to discuss concerns openly and seek support early without fear of consequence. If pilots are afraid to disclose openly, important information may never enter the assessment process in the first place.

For this reason, trust, confidentiality and psychological safety (the ability to speak up without fear of reprisal) remain essential prerequisites for any successful mental health framework.

ECA Perspective

ECA supports approaches that encourage early support, trust-based discussions and collaborative assessment [1]. Functional risk assessment models such as MIRAP have the potential to improve individualisation and consistency of aeromedical decision-making compared with purely diagnosis-based approaches.

However, any future implementation should be accompanied by:

- strong confidentiality protections;
- independent and trusted peer support structures;
- transparent decision-making processes;
- reliable opportunities for a secondary review;
- protection against unnecessary or disproportionate limitations; and
- harmonised application across Europe.

Key Takeaway

MIRAP REPRESENTS A SHIFT FROM ASKING:
"Does this pilot have a diagnosis?"

TOWARDS ASKING:
"Does this situation create a relevant & manageable risk to safe flight operations?"

This represents an important change in thinking. Whether MIRAP ultimately improves both aviation safety and pilot wellbeing will depend not only on the assessment process itself, but also on the level of trust, transparency, support and fairness surrounding its implementation.

[1] ECA Position Paper on Pilot Mental Health and Wellbeing:
https://www.eurocockpit.eu/sites/default/files/2025-10 ECA_Position_on_Mental_Health_and_Wellbeing_PP_25_1015_F.pdf

Mental health support should encourage pilots to seek help earlier, **not create additional barriers to doing so.**

Roles of Mental Health Professionals in Aviation

Purpose

This document offers an overview of the current roles of mental health professionals involved in supporting pilots. It outlines the principal professional disciplines, their recognised scope of practice, and how these roles contribute to prevention, assessment, treatment, recovery and return to work within aviation.

Although the names of the professional roles and the roles themselves may differ between countries, international aviation guidance consistently recognises the importance of appropriately qualified mental health professionals working alongside aeromedical examiners, peer support programmes and operators to promote both pilot wellbeing and aviation safety.

Current International Guidance on MHP roles

The aviation documentation offering guidance internationally recognises that pilot mental health is best supported within organisational cultures that encourage help-seeking as a critical part of maintaining aviation safety.

Currently the guidance emphasises:

- access to appropriately qualified mental health professionals;
- confidential peer support programmes;
- early identification and timely intervention;
- referral pathways between support services and aeromedical assessment;
- return-to-work processes following illness or treatment;
- initial psychological assessment.

These guiding principles published by ICAO, EASA and FAA and elsewhere are reasonably consistent.

Member States should clearly identify the different professional roles and what they encompass so that AMEs can guide the pilots through the system accordingly.

Professional Roles

Aeromedical Examiners (AMEs)

AMEs remain the responsible person for medical certification. Should they identify concerns requiring further psychological or psychiatric assessment, they consult and request a statement from treating clinicians or aviation psychiatrists or psychologists.

Clinical Psychologists and Psychiatrists

Clinical psychologists and psychiatrists assess, diagnose and treat mental disorders and psychological conditions that may affect wellbeing or safe performance.

Their work includes:

- comprehensive psychological assessment and, where required, written expert opinions for the AME or regulatory authority;
- diagnosis;
- psychotherapy;
- psychiatric treatment, including medication management (usually by medical doctors only);
- risk assessment;
- rehabilitation and return-to-work planning; and
- liaison with AMEs on aeromedical issues or fitness-for-duty certification.

Working effectively in aviation requires an understanding of aeromedical certification and aviation operations. This helps practitioners to:

- consider how symptoms may be affecting performance;
- apply necessary treatment processes;
- comply with regulatory protocols; and
- understand the impact on fitness-to-fly and return-to-work policies.

Counselling Psychologists and Counsellors

Counselling professionals support pilots experiencing psychological distress, adjustment difficulties or significant life events that may affect wellbeing and or work performance.

Typical areas include:

- occupational stress and training performance concerns
- relationship and family difficulties
- grief and bereavement
- adjustment to life transitions
- burnout and emotional exhaustion
- coping with operational pressures.

Counselling focuses on helping individuals understand and manage difficulties, develop coping strategies and, where necessary, facilitate referral to more specialised clinical or aeromedical services.

Aviation Psychologists[2]

Aviation psychologists apply psychological science within the aviation environment, such as occupational stress, performance and human error. This work may be in combination with clinical or counselling work.

[2] In some countries Aviation Psychology is not recognised as a licensed branch of psychology. We encourage countries to develop their definition of Aviation Psychologists. A good example can be found with the European Association for Aviation Psychology (EAAP).

Beyond clinical or counselling practice, their work may include:

- pilot selection and assessment
- cognitive and behavioural assessment
- psychometric evaluation
- human factors
- fatigue as it impacts performance and workload management
- peer support programmes

Peer Support Programmes

Peer support programmes provide confidential, non-clinical support delivered by appropriately trained aviation peers. Peer support programmes are an increasingly recognised component of supporting aviation mental health and wellbeing.

The peer role is to:

- provide an accessible first point of contact
- offer confidential emotional support
- normalise help-seeking
- encourage early intervention
- facilitate referral to appropriate professional services where required.

It is never diagnostic or therapeutic.

The Mental Health Professional in Peer Support Programmes is responsible for:

oversight,
ensuring safety,
selection, training and supervision of peers,
clinical escalation,
regulatory compliance.

Excluded from this document are other components of the aviation system that play a role in supporting mental health:

- fleet or line managers
- safety managers
- training and CRM instructors
- occupational health
- coaching
- psychiatric nurses
- social workers
- Employee Assistance Programmes (EAPs) or Employee Wellbeing Programs (EWPs)

Each discipline has a distinct scope of practice, ethical responsibilities and competency requirements. Effective support for the individual depends upon understanding of and appropriate referral to different professional disciplines but should not exceed the scope of practice.

Offering role clarity can assist pilots in accessing the most suitable support while reducing confusion regarding therapeutic treatment and aeromedical certification.

Alcohol Biomarkers in Aviation

Alcohol regulation in aviation has traditionally focused on acute impairment, such as blood alcohol concentration (BAC), hour limitation (bottle-to-throttle) rules, and visible signs of intoxication. Increasingly, however, aviation authorities, Aeromedical Examiners (AMEs), occupational physicians, and operators use mid- and long-term alcohol biomarkers such as Phosphatidyl ethanol (PEth), Carbohydrate-Deficient Transferrin (CDT), and hair testing to estimate alcohol consumption over weeks or months.

These tests may provide useful information, but they also raise an important question: should aviation systems regulate alcohol use itself, or only alcohol-related safety risk?

The Ethical Dilemma: Professional Responsibility Versus Personal Autonomy

Pilots operate in a safety-critical profession and accept restrictions that do not apply to many other occupations. Nevertheless, they retain rights to privacy and autonomy regarding lawful off-duty behaviour. Therefore, the central question is: To what extent can a pilot's professional status be affected by a laboratory marker that estimates alcohol exposure but does not directly measure impairment or operational performance?

Biomarkers may indicate exposure, but they do not directly measure:

- judgement
- reaction time
- fatigue
- decision-making
- fitness to fly

Grounding decisions based solely on a laboratory value may risk:

- over-interpreting biological variability
- penalising lawful leisure-time behaviour
- reducing trust in aeromedical systems
- encouraging concealment rather than transparency

Biomarkers may therefore be most appropriately used as screening and monitoring tools rather than isolated disciplinary criteria.

Can There Be a Maximum Acceptable Alcohol Limit?

Unlike blood alcohol concentration during duty, there is no universally accepted threshold of off-duty alcohol consumption below which performance effects disappear. The critical issue is not simply alcohol quantity, but alcohol consequences.

Two pilots consuming similar amounts may experience different effects because of differences in:

- sleep response
- metabolism
- age
- individual susceptibility
- drinking pattern

This becomes particularly relevant because alcohol effects may persist after BAC returns to zero.

Alcohol Consumption Patterns in Europe

Alcohol use varies substantially across Europe, culturally and geographically. Approximate adult consumption patterns often used in public health literature are:

Pattern	Men	Women	Typical interpretation
Low consumption	<7 drinks/week	<5 drinks/week	Minimal risk
Moderate consumption	7–14 drinks/week	5–10 drinks/week	Generally socially acceptable
Higher consumption	>14–21 drinks/week	>10–14 drinks/week	Increased health concern
Heavy drinking	>21 drinks/week	>14 drinks/week	Increased risk of alcohol-related harm
Binge drinking	≥5 drinks/occas	≥4 drinks/occasion	Episodic heavy exposure

Definitions vary significantly between countries and institutions.
Southern European patterns have historically involved more regular moderate consumption with meals, whereas some Northern European countries have shown greater prevalence of episodic heavy drinking.

From an aviation perspective, episodic heavy drinking may be particularly important because safety effects may persist after alcohol itself has disappeared.

Alcohol and Performance Beyond BAC

Even without intoxication, alcohol can influence performance relevant to aviation. Potential effects include: **Sleep disruption**

Alcohol may shorten sleep latency but reduce sleep quality through:

- REM suppression
- fragmented sleep
- early awakening
- Residual cognitive effects

Heavy episodic ("binge") drinking may produce residual effects lasting up to approximately 24–48 hours, including:

- impaired attention
- reduced working memory
- slower psychomotor performance
- reduced executive function

Thus, alcohol can become a safety issue even in the absence of alcohol dependence or detectable BAC.

Mid- and Long-Term Alcohol	
PEth level	**Typical interpretation**
<0.05 µmol/L	Minimal/negative
0.05–0.30 µmol/L	Moderate consumption possible
>0.30 µmol/L	Repeated heavy consumption likely
>0.40 µmol/L	Strong evidence of substantial exposure

Typical characteristics:

- Detectable approximately 2–4 weeks
- False positives uncommon
- Commonly requires approx 4 doses (50g) daily alcohol usage for 2 weeks to raise over 30 µmol/L
- However, with higher doses/day (binge drinking), PEth levels may raise above 30 µmol/L in short time.

In a study by Schröck et al. 2017, participants consumed a single dose calculated to produce a blood alcohol concentration of 1‰ (measured levels ranged from 0.6 to 1.1‰). This resulted in variable PEth values ranging from just over 0.05 µmol/L to nearly 0.30 µmol/L (PEth remained detectable for several days afterward, in one case up to 12 days.

In a study involving alcohol consumption over five consecutive days, participants received individually adjusted doses intended to achieve a blood alcohol concentration of 1‰, simulating continuous “binge drinking” (defined as consuming five or more standard drinks on a single occasion or reaching at least 1‰). PEth levels increased progressively, reaching maximum values between 0.10 and 0.34 µmol/L (Gnann et al. 2012).

Potential confounders:

- blood transfusion
- severe red blood cell disorders
- sample handling errors
- rare endogenous ethanol production

CDT (Carbohydrate-Deficient Transferrin)

CDT reflects changes in transferrin caused by sustained heavy alcohol use.
Typical interpretation

CDT (%) Interpretation	
<1.7–2.0	Normal
>2.0–2.5	Suspicious
>2.5–3.0	Heavy use likely

Typical characteristics:

- Sensitivity: ~60–80%
- Specificity: ~80–95%
- Usually elevated after approximately 50–80 g alcohol/day over 1–2 weeks

Potential confounders:

- Sensitivity: ~60–80%
- liver disease
- pregnancy
- genetic transferrin variants

Hair Testing (EtG/FAEE)

Hair analysis provides information on alcohol exposure over approximately three months. **Typical hair EtG interpretation:**

Hair EtG	Interpretation
<7 pg/mg	Abstinence/low consumption
7–30 pg/mg	Moderate use possible
>30 pg/mg	Chronic excessive use likely

Potential confounders:

bleaching or hair treatments
hair damage
cosmetic procedures

Conclusions

Alcohol biomarkers increasingly provide objective estimates of alcohol exposure, but do not reliably indicate when, how often, or in what pattern alcohol was consumed, nor does it directly measure impairment or fitness for duty. Importantly, aviation safety is primarily affected by acute and residual cognitive impairment, which typically resolves within 24–36 hours after alcohol exposure in healthy individuals, even after higher doses (Verster et al. 2003; Howland et al. 2010). Mid-term biomarkers, by contrast, reflects cumulative exposure over days to weeks, not operational performance at the time of duty. Therefore, using a fixed biomarker cutoff as a proxy for flight safety risk represents a category mismatch between biomarker meaning and operational relevance.

From an aeromedical and safety standpoint, grounding decisions should be based on evidence that safety is actually compromised. This requires corroborating indicators of problematic alcohol use, such as:

- Repeated elevated biomarkers over time
- Clinical signs of misuse or dependency
- Behavioural concerns or performance issues
- Inability to comply with established “bottle-to-throttle” guidance

A single elevated biomarker value—particularly in the absence of such findings—does not meet this threshold. Without additional context, it may simply reflect recent leisure-time consumption, including situations such as holidays or isolated binge episodes.

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