



Aerospace Mental Health Work Group Report

Introduction. The report represents a historical and updated account of the work of the Aerospace Mental Health Work Group (AMHWG). This work was largely accomplished prior to the occurrence of the COVID-19 pandemic. Surveys and media accounts have demonstrated that the rapid spread of COVID, the large number of deaths, and associated health concerns has generated additional stress and anxiety in most individuals. The need to remain in isolation, to wear a mask and maintain social distancing has also been stressful. The impact has had a devastating impact on the aviation community; possible loss of 25 million aviation jobs worldwide and a significant economic impact on the airlines. A recent survey by Cahill, Cullen, Anwer, & Gaynor (2020) reveals some of the impacts on the stress and wellbeing of employees in the aviation community. Members of the AsMA work group are currently involved with ICAO, EASA, EPPSI and other workgroups in efforts to assist pilots and others in coping with the impact of COVID-19. All of us need to be aware of the continued need to support aviation personnel and encourage efforts to promote wellbeing. In November ICAO issued an Electronic Bulletin “Promoting, Maintaining and Supporting Mental Well-being in Aviation During the COVID-19 Pandemic.” Recommendations for support are provided for stakeholders, national aviation authorities, professional and industry associations, industry service providers, aviation medical assessors (AMEs and healthcare professionals) and aviation personnel. The Bulletin includes a description of how Peer Support contributes to a positive safety culture.

Brief overview of regulatory activities:

- Many international airlines quickly dictated that two pilots always remain in the cockpit.
- High level reviews by regulatory authorities:
 - The FAA chartered a Pilot Fitness Aviation Rulemaking Committee in 2015. The “Pilot Fitness Aviation Rulemaking Committee Report was completed on Nov. 18, 2015 and a set of eight recommendations were provided.
 - EASA established a Germanwings Task force. An action plan and recommendations (Version 1) was completed in October 2015. The EASA Medical Aircrew Medical Fitness Opinion 14/2016 was completed December 2016.
 - The BEA Germanwings Accident Report (Bureau d’Enquêtes et d’Analyses pour la sécurité de l’aviation civile) was published in March 2016.
 - Regulatory authorities began enhanced training for AMEs to increase their awareness of potential mental health issues and their ability to detect potential warning signs.

- UK – Sally Evans provided an updated report on activities within the UK and internationally.
 - The British Psychological Society published a position statement - “Aviation and aerospace psychology: Pilot mental health and wellbeing November 2017”
Recommendations are focused on qualifications of aviation psychologists, mental health evaluations and promotion of pilot wellbeing.
 - Ries Simons and others supported the development of the EPPSI Guide on the establishment of Pilot Peer Support programs that was prepared as part of the European Pilot Peer Support Initiative.
 - The Air Line Pilots Association – International (ALPA) and the International Federation of Air Line Pilots Association (IFALPA) published position papers and developed courses on Pilot Peer Support Programs leading to the creation of PPSP’s among several airlines and enhancement of existing PPSP’s.
- Revised AME procedures
- <https://www.easa.europa.eu/sites/default/files/dfu/EN%20to%20Decision%202019-002-R.pdf>
Page 11, Section 2.3.6.1 Aeromedical examiners EASA ED Decision 2019/02/R dated 29 January 2019).
- How will the effectiveness of this training be evaluated? (Quay indicates that Page 113 addresses AME Peer Support Groups (EASA document published April 29, 2019 AMC & GM to Part-MED—Issue 2 (pages 97-113).
<https://www.easa.europa.eu/sites/default/files/dfu/Annex%20I%20to%20ED%20Decision%202019-002-R.pdf>
- March 2019 report by Francisco Rios Tejada on “AME’s Mental Health Assessment: Tools & Training”
- The FAA has bolstered their AME training on mental health evaluations of pilots, revised the AME syllabus and continued to administer surveys of AMEs and pilots regarding AME performance.

AsMA Response

- Created an ad hoc working group on Pilot Mental Health (now called the Aerospace Mental Health Working Group) in 2012
 - AsMA letter to FAA Administrator Michael Huerta regarding “Pilot Mental Health – Expert Working Group Recommendations” September 4, 2012
 - AsMA letter to FAA Administrator Michael Huerta “Pilot Mental Health – Updated Expert Working Group Recommendations” September 21, 2015
 - Published Pilot Mental Health Working Group Recommendations – *Aviation Space and Environmental Medicine*, 3(12), December 2012.
 - Continued work by Aerospace Mental Health working group.
- **Peer support groups-** Herwin Bongers submitted the IFALPA Human Performance Committee position paper. The EASA Directive 2018/012/R provides information regarding

peer support groups. As indicated above, the EPPSI Guide concerning the establishment of pilot peer support programs was developed and published in November 2019. The ICAO mental health work group is currently working on guidance regarding the role of Pilot Peer Support Groups (PPSGs) internationally. While not complete at the present time, the emphasis is on the importance of PPSGs in providing support for pilots and other members of the aviation community during the COVID-19 pandemic. The emphasis is on the need for airlines to extend their support to those who are on furloughs. Corporations need to recognize that PPSGs are also needed to support other aviation personnel (maintenance, flight attendants, other personnel, and air traffic controllers).

- Recommendation:

- We support the recommendations from the EPPSI Guide. (<http://eppi.eu/wp-content/uploads/2020/10/EPPSI-Guide-2nd-Edition-October-2020.pdf>)
- PPSGs help support pilots and others during times of stress.
- We support the extension of PPSGs to employees who are furloughed.
- We recognize that Canada, Europe, and other countries have active Peer Support Groups for ATC. We support the expansion of peer support groups to other aviation personnel.

- **Operations considerations in aviation operations.** Kris Belland and Carlos Salicrup provided a report and discussion regarding the need for a more integrated approach to various mental health and support programs (Project Wingman, HIMS, and EAP). We need training embedded for both aviators and aviation medical support. We also need to train pilots, instructors, pilot chiefs, and crew departments to recognize pilot wellbeing as well as risky behaviors that may impact safety. These efforts should be included as part of an organization's Safety Management System (SMS). Under SMS all employees are responsible for identifying individuals or conditions within the workplace that pose an unnecessary threat or risk to performance and safety. Peer support groups represent one channel for the provision of this information along with SMS organizational guidelines.

The suspect behaviors include:

- A generally high or average performing pilot who suddenly performs low in a training or line check.
- Constant sick leaves, repeated missing to work, late reports to work.
- An average pilot who is constantly being flagged in SMS or FOQA situations
- Repeated behavioral confidential reports.
- Multiple crew members submitted requests not to fly again with the pilot.
- A crew member that had a traumatic or highly stressful situation, i.e., loss of a close family member, critically sick close family member, a partner separation, loss of house, critical financial situation, etc.

Need to develop specific recommendation or set of recommendations that are integrated and support individual and organizational responses as part of SMS. The authors of a recent survey (Cahill, Cullen & Gaynor (2019) Pilot wellbeing & work-related stress (WRS), Symposium on Aviation Psychology) concluded that “issues pertaining to WRS and wellbeing are not being adequately managed in terms of airline safety management systems/processes.” A former FAA acting administrator, Joe Del Balzo has suggested that the mental health focus could be structured along the lines of the existing Fatigue Risk Management System (FMRS).

- Recommendation:
 - Aviation organizations need to integrate mental health and support programs within the Safety Management System (SMS) to ensure that employees recognize the importance of supporting the mental health needs of others.

- **Aviation medical examiner education.** Individual recommendations to enhance approach to mental health assessment, using a competency-based design were provided by Chun Hon Chong. The documents listed below were provided and reviewed. (1) Bor R, Eriksen C, Oakes M, Scragg P. (2017). The Practicalities of Clinical History-Taking and Mental State Assessments of Pilots. In: Bor R, Eriksen C, Oakes M, Scragg P, (Eds.). Pilot Mental Health and Support. London: Taylor and Francis; 2017. p. 97-115. (2) Federal Aviation Administration (FAA) Guide for Aviation Medical Examiners: Specifications for Psychiatric and Psychological Evaluations (updated 1/27/2021). (3) Hudson, M, Herbert K. (2017). The Practicalities of Fitting Mental Health Screening into the Time-limited Annual Medical Check and the Problems of Confidentiality. In: Bor R, Eriksen C, Oakes M, Scragg P, (Eds.). Pilot Mental Health and Support. London: Taylor and Francis, p. 208-26.

Francisco Rios Tejada provided the report from the AESA (2019) AMABEL meeting that was held in Brussels on 16th of March (AME’s mental health assessment: Tools & Training). The report recommends that the psychological part of the initial and recurrent aeromedical assessment and related training for AMEs should be strengthened. In support of AMEs, efforts were focused on designing a mini questionnaire, a set of questions, computer-based tools, a mental health syllabus, and guidance for psychometric testing. Information was also provided regarding drug and alcohol testing.

We need to decide if we want to use the information provided to develop a set of recommendations regarding AME education and training. We should also give consideration to Tony Evan’s comments regarding whether AMEs should include pilot wellbeing as part of their examination. As we indicate below, this is part of the ICAO publication on *Pilot Fitness to Fly*.

- **Non-aviation health care provider education.** While we did not receive a formal report, comments were provided by several members of our work group. Robin Low pointed out the need to educate our colleagues who are not in the Aviation community on some basics of

Aviation Medicine and the critical role that medical fitness plays in the pilot and aircrew community’s ability to perform their jobs safely. How can this be accomplished?

➤ **Health promotion – disease prevention and Pilot/ATC support from employers.** Tony Evans stressed the importance of promoting pilot health and well-being and indicated that AsMA should:

- Support the approach of ICAO in its recent initiative to include health promotion as part of an organization’s safety management system,
- Encourage regulators and operators to fully implement health promotion activities for all licensed personnel and to continue such activities if already in place,
- Encourage pilot and other representative organizations to continue to provide advice on prevention of ill health and to expand this area where appropriate,
- Encourage license holders to take an interest in their personal health and, if not already done, consider adopting a lifestyle that will reduce their risk of developing a medical condition that could adversely affect their career or enjoyment of their hobby,
- Support a multi-organizational approach so that license holders receive a common health message from all aviation-related sources,
- Encourage AME’s to emphasize health maintenance during periodic examinations as many employers also employ the AME’s who conduct exams,

In previous communications we considered a recommendation that AsMA use the journal to promote these ideas, either via a series of articles or a special issue. To follow up on this possible approach, the table below was developed to illustrate some of the issues that may be included if we want to consider that approach. The ICAO initiative is the book (*Fitness to Fly – A Medical Guide for Pilots*). The book *Pilot Mental Health Assessment and Support: A Practitioner’s Guide* (Bor, Eriksen, Oakes, & Scragg, 2017) includes chapters on the assessment of pilot mental health and peer support. More recently (April 2020), the Flight Safety Foundation published “An Aviation Professional’s Guide to Wellbeing.” We do not want to necessarily duplicate information that is already available, however we should aim at providing additional information to the broader aviation community in support of this idea. Please provide feedback regarding whether (a) we should make a recommendation, (b) is so, what should we include, and (c) should the focus be solely on pilots or cover all aviation personnel?

Fitness to Fly, ICAO	Bor, Eriksen, Oakes, & Scragg	Our work groups?
Understanding cardiovascular risk	The use of psychotropic medications and fitness to fly	Medications and pilot performance
How to keep mentally well	Human factors and factor of the human	Stress management/wellbeing
Impact of alcohol and drugs on performance and health	Promoting mental health and well-being in aviation	A holistic approach to pilot performance optimization

What we know about cancer	Stigma associated with mental illness among aircrew	Coping with health conditions
How to reduce your health risks from musculoskeletal injury	Psychosocial stressors associated with being a pilot	
Nutrition and weight management	Promoting good psychology health amongst pilots	Lifestyle (diet, exercise, etc.)
Sleep and the impact of mental conditions	Behavioral dynamics on the flight deck and implications for mental health	Sleep and fatigue management
Travel health	Peer-to-peer support and development programmes for pilots: time for a holistic approach	Peer and other social support
Hearing and vision	Peer support programme for pilots	AME role in health promotion and mental health assessment
	Pilot's emotions in the cockpit	

- Recommendation:
 - We recognize the importance of health and well-being in all aviation personnel in helping individuals cope with everyday stressors as well as the increased stress associated with the COVID-19 pandemic.
 - We recommend that AsMA prepare a Fitness and Well-Being book designed to help pilots, air traffic controllers, flight attendants and other personnel develop a healthier lifestyle. This should include information regarding more effective coping with the impact of the pandemic.

➤ **Privacy vs. accountability balance.** The summary report and recommendations by Diederik de Rooy and Michael Drane is provided below. We should update the discussion and references based on the recently published article in *Aerospace Medicine and Human Performance*, 2019, 90(10), 872-881. The article is entitled “Aviation safety vs. medical confidentiality: disclosure of health information for accident prevention and investigation” by JM Schuite.

There is a tension between promoting public good and upholding personal rights. Some jurisdictions recognise this tension and provide reporting channels which respect personal privacy. In most jurisdictions it is possible to breach medical confidentiality to protect the safety of others.(1) Important barriers which prevent concerned individuals from reporting mental illness include potential financial loss through loss of medical certification, loss of self-esteem and image, and the perception of punitive regulatory approaches. Dedicated programmes addressing substance use, and management of pilots with depression have demonstrated improved reporting and treatment.(2-4) In line with established aviation safety management principles, a culture which promotes reporting, but safeguards the individual’s privacy as far as possible, is recommended.(5, 6) This means that:

1. Medical confidentiality remains a fundamental ethical obligation in aerospace medicine.

2. A regulatory framework incorporates health promotion (wellbeing) and pathways to recovery.
3. Regulators should facilitate the development of a 'safe harbour' for disclosing mental problems and receiving treatment.
4. Blanket mandatory reporting of all pilots with mental health problems to the aeromedical authorities should not be encouraged, as it will likely deter people from seeking help.(7-17)
5. Regulators, operators, and industrial groups should explore ways of minimising the risk of income loss due to mental illness. Suitable insurance should be mandated.

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- **Psychological Assessment Sub-Group Recommendations** (2019 Revision) prepared by Chris Front: The members feel that the statements reflect the concerns expressed by Sally and Robert about implementing an effective strategy internationally.

The 2016 published Working Group recommendations subsection on psychological assessment noted:

“Serious mental illness such as acute psychosis is relatively rare, and its onset is difficult to predict. In-depth psychological testing for detecting serious mental illness as part of the routine periodic pilot aeromedical assessment is neither productive nor cost effective and therefore not warranted. *Exceptions to this include an initial and appropriate psychological evaluation, established by subject matter experts, that is recommended for pilots entering airline employment and recurrently for pilots with a history of mental illness.*” [emphasis added to original.]¹ (p. 505)

Recurrent mental health evaluations of pilots with a history of mental illness are already conducted under the auspices of the civil aviation authorities and other regulatory agencies. Hence, our recommended refinements focus on the issue of pilots entering airline employment without previously identified conditions.

Important distinctions exist between “select-in” psychological assessment procedures aimed at identifying those applicants who possess the psychological attributes that are important for successful performance as a pilot versus “select-out” procedures used to identify psychopathology considered disqualifying for flight duties.²

Select-in psychological assessments may include a variety of aptitude and personality measures. Personality tests used in this endeavor are designed to measure variations in normal adult personality and to identify pilots with the personality traits (preferably based upon empirically derived findings from task analyses) that make them a “good fit” for aerospace duties. Select-in

assessments are utilized by many, but not all, airlines. They are typically conducted by research or industrial/organizational psychologists. A recent international review of existing approaches to this aspect of pilot selection, based on seven empirically validated “best practices” in personnel selection, found that, of the 15 test batteries examined, several adhered to the recommended best practices. But, as a group, there were significant weaknesses.³ The authors argue for the use of empirically validated psychological test batteries to ensure that pilots who are selected will possess the necessary knowledge, skills, abilities, and other characteristics to meet the challenges of serving as an airline pilot.

Unlike select-in techniques, select-out techniques are considered medical procedures that are designed to identify disqualifying psychopathology. This distinction requires that select-out assessments be conducted by clinical psychologists with appropriate training and expertise in aerospace clinical psychology. Depending on the jurisdiction, additional ethical and legal requirements (e.g., the Americans with Disabilities Act⁴) may exist.

The Minnesota Multiphasic Personality Inventory – 2 (MMPI-2) is a broad-band measure of psychopathology.⁵ Despite the word “personality” in the name, the MMPI-2 is not a mere measure of personality. It is considered the gold standard in self-report measures of psychopathology. Empirical evidence from over 6,000 peer-reviewed journal articles demonstrates that the MMPI-2 – when used by a properly trained, competent clinical psychologist – is capable of reliably identifying undiagnosed psychopathology that would pose a threat to safety.^{6,7,8,9} It is notable that empirically-derived MMPI-2 normative score patterns exist for both pilots and air traffic controllers.^{6,8} Population-specific norms are an essential requirement for valid testing since tests normed on the general population frequently lead to false positives or false negatives when applied to aerospace personnel.^{6,8,10}

It is important to emphasize that, despite its utility, the results of a single psychological test such as the MMPI-2 should never be counted on to provide a diagnosis but should instead be one component of a complete psychological assessment which also includes, at minimum, a record review, psychosocial/clinical history interview, mental status examination and behavioral observations. It is critical that the clinician have expertise with aviation personnel; otherwise, their findings will have the appearance of validity while frequently being erroneous.¹⁰ It is also important to note that, like a physical examination, while psychological assessment may identify vulnerability to the development of a mental health disorder in the future, it is most valid for the characterization of current mental health status.

Psychological assessments that include a well-validated, broad-band measure of psychopathology that utilizes pilot normative data and has demonstrated efficacy with pilots, such as the MMPI-2, can identify pilots with undiagnosed psychopathology that would pose a threat to safety.^{6,7,8,9} Most airlines currently rely exclusively on the routine medical examinations required by regulatory authorities to identify psychopathology. Select-out psychological assessments are currently conducted by only a few airlines.

In the interest of aviation safety, the “best practice” for selection of airline pilots should include both select-in and select-out psychological assessments based on empirically validated techniques that incorporate normative data derived from pilots and conducted by clinical

psychologists with appropriate training and expertise in aerospace clinical psychology. Such procedures exist for both endeavors.^{2,3,5,6,7,8,9,10.}

The Working Group recognizes that there is great variability globally in the availability of properly trained aerospace clinical psychologists and associated resources.¹¹ Hence, while the described “best practice” should be an aspirational goal for the global aerospace community, it is important to acknowledge that it is not currently achievable everywhere. It is vital to also note that aerospace safety will be negatively impacted by the creation of programs that provide only the appearance of thorough selection procedures while not using validated techniques or properly trained clinicians.

- Recommendation:
 - “Serious mental illness such as acute psychosis is relatively rare, and its onset is difficult to predict. In-depth psychological testing for detecting serious mental illness as part of the routine periodic pilot aeromedical assessment is neither productive nor cost effective and therefore not warranted. *Exceptions to this include an initial and appropriate psychological evaluation, established by subject matter experts, that is recommended for pilots entering airline employment and recurrently for pilots with a history of mental illness.*” [emphasis added to original.]¹ (p. 505)
 - In the process of selecting pilots’ airlines should utilize “best practices” for both “select-in” and “select-out” components of airline pilot selection. An important best practice is to use only those psychological tests that have been empirically validated with pilots.
 - The inclusion of “Select-out” psychological assessments in airline selection of pilots is optimal for aviation safety. It is important to recognize that “select-out” psychological assessments require the availability of highly trained clinical psychologists and, when testing is included, a properly validated test with pilot norms. Only a few airlines in the U.S. currently incorporate “select-out” practices meeting those criteria, and currently available resources do not permit that recommendation to be carried out internationally. Until they are feasible, “select-out” assessments should remain an aspirational goal internationally.

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Additional Recommended Reading:

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