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We accept this thesis as conforming to the required standard

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ABSTRACT

This thesis examines how mental health policies and regulations for commercial pilots are constructed and applied across seven major aviation jurisdictions: New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and the international standards set by the International Civil Aviation Organization. The aim of this study is to assess the clarity, inclusivity, and effectiveness of these regulatory frameworks and to explore how they impact pilot well-being and aviation safety. The central research question focuses on identifying the similarities and differences in mental health governance and regulation across these jurisdictions. Grounded in Critical Theory, the research employs a qualitative methodology, utilizing comparative and descriptive research designs. Content analysis was conducted on aviation regulatory documents and 35 incident reports involving psychological factors, drawn from a broader dataset of 355 aviation incidents between 2000 and 2025. The findings reveal that while some jurisdictions, such as Australia and the United Kingdom, offer comprehensive and progressive mental health frameworks, others, such as Canada, remain rigid, bureaucratic, and lacking in transparency. Key patterns across the incidents include fatigue, stress, and the underreporting of mental health symptoms due to stigma and fear of professional repercussions. The study underscores the need for more human-centred and flexible regulatory approaches. This research makes a significant contribution to scholarly discussions on aviation safety, occupational health, and policy development. It challenges traditional disqualification-focused models and offers a nuanced perspective on how mental health is operationalized within regulatory frameworks. The findings provide critical insights for improving global aviation policy to better support pilot mental health and aviation safety.

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GLOSSARY ACRONYMS

CAA	Civil Aviation Authority	(New Zealand and United
Kingdom)		
CASA	Civil Aviation Safety Authority	(Australia)
EASA	European Union Aviation Safety Agency	(European Union Countries)
FAA	Federal Aviation Administration	(United States)
ICAO	The International Civil Aviation Organization	(International)

CHAPTER I: INTRODUCTION

I-1) Chapter Overview

This chapter introduces the global issue of pilot mental health and its connection to aviation safety, focusing on how commercial airline pilot well-being is shaped by regulatory frameworks. The thesis aims to explore and compare mental health policies across seven jurisdictions, highlighting both similarities and regulatory gaps that influence pilot support and safety. Grounded in Critical Theory and using a qualitative, document-based methodology, the study draws from international policy documents and incident reports to identify patterns and inconsistencies. The chapter is organized to provide the background, rationale, research question, significance, scope, and structure of the thesis, laying the foundation for a deeper analysis in the chapters that follow.

I-2) Background

Pilot mental health has emerged as a critical issue in aviation safety **over** the last twenty years. Studies show that psychological distress among pilots is often underreported due to stigma and fear of job loss, leading to insufficient disclosure and monitoring (Cross et al., 2024; Hoffman et al., 2022). This research extends current discussions by analyzing aviation incidents in conjunction with regulatory standards to demonstrate how mental health issues have impacted flight safety over the past twenty years. Multiple aviation accidents caused by pilot mental health issues have prompted questions about current mental health surveillance and support systems. While many aviation authorities have developed detailed regulations and screening protocols over the years, these frameworks often remain rigid and bureaucratic, offering little flexibility for individual circumstances or opportunities for meaningful support. Despite growing awareness of

the importance of mental health in aviation, more attention is needed to advance pilot well-being policies from minimum requirements toward comprehensive, proactive support.

This study uses a qualitative, document-based methodology to compare and analyze mental health-related aviation regulations across seven jurisdictions: New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and international standards. Drawing on 355 aviation incident reports from 2000 to 2025, 35 cases were identified where psychological factors like fatigue, stress, suicide, or substance use were cited. Findings show inconsistencies across jurisdictions in terms of clarity, accessibility, and flexibility of mental health regulations. While some regions, like Australia and the United Kingdom, provide more comprehensive and structured frameworks, others, like Canada, offer minimal guidance. However, there is a clear need for approaches that emphasize mental health support, early detection, and recovery without punitive consequences, reflecting a shift toward safety through care rather than exclusion.

I-3) Research Question

What are the similarities and differences in mental health policies and regulations for commercial pilots in New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and on an international level?

I-4) Rationale and Significance

I-4-a) Rationale

This thesis aims to contribute to the broader understanding of how commercial pilot mental health is regulated and addressed across different jurisdictions and to explore how these policies may impact safety, stigma, and pilot well-being. While aviation authorities have made efforts to incorporate mental health into medical certification and safety standards,

inconsistencies persist across countries, and there has been little critical research comparing these approaches. A qualitative and comparative analysis of regulations, literature, and incident reports enables the identification of patterns, gaps, and potentially discriminatory practices within existing frameworks. This study offers insight into how mental health is operationalized within aviation governance by focusing on both policy and real-world aviation incidents and lays the foundation for improved, more consistent global approaches to pilot mental health.

I-4-b) Significance

This thesis is significant because it fills a research gap in the current literature on how commercial pilot mental health is managed and regulated across different jurisdictions. It is crucial to understand how different countries regulate pilot mental health and where there may be inconsistencies, gaps, or discriminatory practices, because this is not only important for aviation safety but also for the well-being of pilots who work in high-stress, high-responsibility jobs. This thesis provides insight into how regulatory frameworks can either support or stigmatize mental health and influence whether pilots will seek help or avoid it because of fear of professional consequences. It also contributes to wider debates on mental health, occupational safety, and institutional accountability. The results of this thesis will be useful for aviation authorities, airline policymakers, aviation medical examiners, and mental health professionals working in aviation. It also provides a basis for further research in aviation psychology, public health policy, and international regulatory studies. This research has the potential to inform more supportive, consistent, and human-centred policies that not only protect public safety but also promote the rights and mental health of commercial pilots around the world.

I-5) Scope and Structure

I-5-a) Scope

This study focuses on the regulation of commercial pilot mental health in seven jurisdictions: New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and international standards. It examines aviation policies and regulations sourced from official websites of major aviation authorities, including the CAA, CASA, Transport Canada, the FAA, EASA, and ICAO. The study also reviews 355 aviation incident reports from the Bureau of Aircraft Incidents Archives between 2000 and 2025, focusing specifically on cases involving human factors and psychological elements. The research is limited to commercial airline pilots and relies solely on publicly available documents and data. This scope was selected to allow for a focused yet comparative analysis across globally influential aviation regulatory bodies.

I-5-b) Structure

This thesis is structured to provide a logical and comprehensive exploration of commercial pilot mental health as addressed through aviation policy and regulatory frameworks. The organization of the chapters is designed to guide the reader from foundational context through thematic literature, methodological choices, data analysis, and, ultimately, to a discussion of findings and recommendations. Each chapter builds upon the previous to ensure clarity, coherence, and depth in examining this important and complex issue.

I-6) Chapter Summary

This chapter established the foundation for the thesis by introducing the issue of pilot mental health and its implications for aviation safety and regulatory policy. It presented the research question, explained the rationale and significance of the study, and outlined the

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theoretical and methodological approaches used. The chapter also defined the scope of the research, identifying the jurisdictions analyzed and the structure of the thesis. The following chapter will present a comprehensive review of the existing literature on mental health in aviation, including key themes such as stigma, depression, anxiety, ADHD, and documented incidents linked to psychological factors.

CHAPTER II: LITERATURE REVIEW

II-1) Chapter Overview

This chapter reviews the current body of literature on commercial pilot mental health, establishing its growing importance within the aviation industry and public safety discourse. It examines key themes, including stigma and barriers to seeking help, depression, anxiety, ADHD, and the regulatory challenges that accompany these mental health concerns. The review also incorporates real-world aviation incidents linked to psychological distress, demonstrating how mental health issues have contributed to accidents and safety risks over time. These studies and cases point out both progress and gaps in policy and support systems for pilots. The chapter is organized into thematic sections to provide a structured analysis of the field and concludes by identifying areas where further research and regulatory improvements are urgently needed.

II-2) Understanding Mental Health and the Pilot Profession

Several studies have been conducted over the past decade to measure mental health statistics among commercial pilots in various parts of the world. Mental health concerns, such as depression and anxiety, are increasingly recognized as prevalent issues among airline pilots. The prevalence rates reported in various studies such as Cahill et al. (2021b), Chen et al. (2024), Hoffman et al. (2019), and Wu et al. (2016), suggest that mental health problems in pilots are not only comparable to those in the general population but may also be heightened due to the unique stressors of the aviation profession.

II-2-a) Stigma and Barriers to Seeking Help

Despite the recognition of mental health issues, stigma remains a significant barrier to addressing mental health in the aviation industry. Interviews with American pilots conducted by Cross et al. (2024) found that mental health is still a "taboo topic," with many pilots reluctant to

acknowledge or discuss personal struggles (p. 6). A significant concern among those pilots is the potential career repercussions of seeking help, including the loss of medical certification and the risk of losing their jobs (Cross et al., 2024; Hoffman et al., 2022). Cahill et al. (2020) shared in their study that 81% of pilots said they would not use available support services because they were worried their confidentiality might be breached, potentially risking their FAA medical certificates. These findings mirror those of Wu et al. (2016), where pilots expressed distrust in confidentiality despite knowing that resources existed to support them.

Pitts and Faulconer (2023) further highlight this issue in their survey of 232 collegiate pilots, revealing that most collegiate pilots (67.6%) were concerned about seeking psychological support due to its potential impact on their medical certification. An even higher percentage (86.7%) indicated they would likely avoid treatment if it could jeopardize their certification. These findings suggest that stigma and fear of professional consequences may persist into pilots' careers, potentially worsening over time and increasing the risk of aviation-related incidents.

In addition to regulatory concerns, long work hours, social isolation, and the stress of their job exacerbate mental health symptoms like anxiety and depression (Cahill et al., 2020). The demanding nature of the job, requiring pilots to remain alert and make high-stakes decisions under pressure, compounds the mental strain associated with these conditions (Cahill et al., 2021b). High-stress events, such as the COVID-19 pandemic, have further intensified these challenges. Pilots are experiencing higher rates of anxiety and depression, but they are reluctant to seek professional help (Cahill et al., 2020).

The stigma associated with mental health among pilots can also be attributed to gender norms and self-esteem. It is noted that 96.6% of airline pilots are male (Zippia, 2025). The overrepresentation of men in the industry reinforces male gender norms (Ferla & Graham, 2019;

Smith et al., 2021). Male characteristics like risk-taking, dominance, pursuit of status, self-reliance, and emotional control (Wong et al., 2017), can play a role in a man's help-seeking behaviour. Wong et al. (2017) found that individuals who strongly adhered to traditional masculine norms were more likely to experience diminished psychological functioning and were less inclined to seek help from professionals.

Compounding the effects of gender expectations, personality traits commonly found among pilots may contribute to their reluctance to seek support. Research suggests that pilots tend to score high in extraversion and conscientiousness, demonstrating discipline, reliability, and adaptability (Breuer et al., 2023; Winter et al., 2021). They also exhibit confidence, which increases with experience in the field (Breuer et al., 2023; Curreri, 2024; Winter et al., 2021). While these traits are essential for their profession, they may also reinforce the perception that seeking help is a sign of weakness, embarrassment, or failure (Breuer et al., 2023; Curreri, 2024). As a result, stigma persists within the industry, creating a significant barrier to addressing mental health concerns.

II-2-b) Depression

Depression among pilots is an increasingly prominent concern in aviation, with evidence pointing to both its prevalence and its implications for operational safety. Multiple studies consistently show that depression is not only present but widespread within the aviation industry. Wu et al. (2016), for example, found that 12% of pilots in their sample reported experiencing depressive symptoms, comparable to the general population, yet concerning given the high-responsibility nature of the profession. Broadening the lens, Cahill et al. (2021a) identified depressive symptoms in 65.6% of aviation personnel, including pilots, cabin crew, and air traffic

controllers, suggesting that psychological strain is prevalent across various roles in aviation, not limited to pilots alone.

The consequences of depression for pilot functioning are significant. Minorretti et al. (2023) highlight that even mild depression can impair critical cognitive functions such as working memory and processing speed, which are skills that are essential for the complex, fast-paced demands of piloting. Pilots with depressive symptoms performed poorly on cognitive assessments like the Stroop Colour-Word Test and the Wisconsin Card Sorting Test, indicating difficulties with flexibility, decision-making, and problem-solving. These findings suggest that depression, even at subclinical levels, may subtly compromise task performance, potentially affecting flight operations in ways that are not immediately visible.

Presenteeism, or continuing to work while mentally unwell, further complicates the picture. Folke and Melin (2022) found that pilots who persisted in flying despite experiencing depression were more likely to report severe mental health issues than those who took leave. This raises concerns about cultural or systemic pressures within the aviation industry that may discourage help-seeking or disclosure. Wu et al. (2016) reinforce this concern, noting that 4% of their pilot participants had experienced suicidal ideation in the two weeks preceding their survey. These figures suggest that some pilots may suppress or downplay their psychological symptoms, potentially due to fear of professional consequences, leading to an undercurrent of unacknowledged emotional challenges in active flight crews.

Fatigue, sleep disruption, and long duty hours play an integral role in this mental health landscape. O'Hagan et al. (2016) reported a clear link between extended work schedules and increased symptoms of depression and anxiety. Pilots subjected to irregular sleep patterns due to shifting flight schedules experienced higher levels of psychological strain, highlighting the

mental toll of fatigue. Venus and Holtforth (2022) add a cross-national perspective, comparing Australian and European pilots. Despite operating within regulatory duty limits, a striking 77% of Australian and 71.8% of EASA-based pilots reported high or severe fatigue. Sleep disturbances were also common, with 18.3% of Australian pilots and 9.4% of European pilots experiencing major sleep issues for over a week each month. Alarmingly, nearly half of the Australian pilots surveyed had been involved in fatigue-related incidents, compared to nearly a quarter of their European counterparts.

These studies together suggest a reinforcing cycle: fatigue contributes to the onset or worsening of depression, which in turn impairs sleep quality and cognitive function. O'Hagan et al. (2016) also identified microsleeps—brief episodes of unintended sleep in the cockpit—as linked to increased reports of depression and anxiety. When placed alongside Minorretti et al.'s (2023) findings on cognitive impairment, it becomes clear that poor mental health, fatigue, and impaired functioning do not occur in isolation but are interconnected in ways that may silently undermine aviation operations.

The literature reveals a complex, multifaceted issue in which psychological well-being, fatigue, and cognitive performance intersect. The high prevalence of depression, its cognitive consequences, and its entanglement with fatigue and presenteeism all point to the need for a more comprehensive and preventative approach to mental health management within aviation. Addressing these issues not only supports pilot well-being but also strengthens the safety and reliability of the industry as a whole.

II-2-c) Anxiety

Although research on anxiety among commercial pilots is less extensive than studies on depression, growing evidence suggests that anxiety is a significant issue within the aviation

community. A large-scale study by Chen et al. (2024) involving 7,055 commercial pilots in China revealed that 23.3% of pilots experienced both depression and anxiety. Poor sleep quality emerged as a critical factor, exacerbating both conditions. This relationship between sleep disturbances and mental health is vital, as it implies that pilots' ability to cope with anxiety may be hindered by irregular or insufficient sleep, a common consequence of demanding schedules and extended work hours within the aviation profession.

The influence of anxiety on pilot behaviour is also apparent in how pilots handle their health concerns. Hoffman et al. (2019) explored the responses of pilots experiencing chest pain, a symptom often associated with anxiety. The study found that many pilots avoided seeking medical help out of fear of losing their certification. Specifically, 38.8% of pilots admitted to withholding medical information from healthcare providers, and 60.2% delayed or avoided seeking care altogether due to concerns about professional repercussions. This hesitation highlights the connection between mental health concerns and the fear of career consequences, representing a significant barrier to treatment for pilots. These findings indicate that pilots' anxiety is compounded not only by psychological factors but also by regulatory pressures, potentially leading to untreated or worsening health issues.

Additional insights into anxiety were offered by Tsismalidou and Kondilis (2024), who surveyed 60 pilots and discovered that 40% experienced mild to moderate anxiety levels, while 10% reported severe anxiety. The study emphasized the role of stress and fatigue in intensifying anxiety, with pilots under high stress or fatigue more likely to report considerable symptoms. These findings provide further evidence that the strenuous nature of the aviation profession, characterized by extended work hours and significant cognitive demands, has a profound impact on psychological well-being. They also reinforce the interconnectedness of depression, anxiety, and occupational stressors within aviation.

II-2-d) Attention Deficit Hyperactivity Disorder

Attention Deficit Hyperactivity Disorder (ADHD) is an emerging concern within aviation, historically under-discussed and under-researched despite its relevance to flight operations and crew performance. Regulatory barriers have played a central role in shaping this silence. Kelley (2024) notes that while many pilots with ADHD successfully manage their symptoms using stimulant medications, the Federal Aviation Administration (FAA) prohibits the use of these medications in aviation. As a result, pilots often face a stark choice: manage symptoms without optimal treatment or risk disqualification by disclosing their condition. This regulatory tension may contribute to underreporting, with anecdotal accounts from pilot communities suggesting that ADHD may be more prevalent among aviation personnel than formal research currently reflects.

Most existing literature on ADHD in aviation focuses on regulatory implications rather than prevalence or broader impacts. However, understanding how ADHD traits intersect with the demands of piloting is crucial. As Brooker (2024) explains, core characteristics of ADHD—including impulsivity, hyperfocus, perfectionism, and difficulties with self-regulation—can present both risks and potential advantages in high-stakes environments. For instance, while impulsivity and poor stress regulation may increase the likelihood of errors, hyperfocus can enhance situational awareness during critical phases of flight, and perfectionism may promote thorough checklist adherence. This dual nature highlights the importance of equipping pilots with strategies to leverage their strengths while mitigating their vulnerabilities.

One of the few empirical studies addressing ADHD in aviation, conducted by Laukkala et al. (2017), examined fatal U.S. aviation accidents between 2000 and 2015. The study found that 0.18% of those accidents involved pilots with ADHD or ADD diagnoses. In several cases, pilots either failed to disclose their diagnosis or did not report their use of medication during medical evaluations. One pilot had a history of traffic violations and behavioural issues commonly associated with ADHD. These findings suggest that fear of regulatory repercussions may lead some pilots to conceal their condition, potentially resulting in undetected risks that compromise flight safety.

The cognitive demands of aviation further highlight these challenges. Koza (2023) emphasizes that piloting requires robust working memory, attentional control, and timely decision-making—domains where individuals with untreated ADHD often experience difficulties. The pressures of the cockpit may exacerbate ADHD-related impairments, particularly if pilots avoid seeking treatment due to fear of certification loss (Kelley, 2024; Laukkala et al., 2017). This mirrors broader patterns observed in pilots with depression and anxiety, where stigma and regulatory concerns deter help-seeking behaviours, increasing both personal and operational risks.

While organizations such as the European Union Aviation Safety Agency (EASA) have introduced mental health initiatives targeting aviation personnel, these efforts remain largely reactive. As Cahill et al. (2021b) note, most current strategies focus on secondary or tertiary interventions—managing symptoms after they emerge—rather than emphasizing primary prevention or early identification. Comprehensive, proactive approaches are essential for addressing ADHD and other neurodevelopmental conditions in aviation. This includes reassessing regulatory frameworks to reduce stigma, improving access to care, and ensuring that emotional support services extend to all flight crew members, including those with less visible or formally recognized conditions like ADHD.

II-3) When Mental Health and Aviation Collide

Over the past several decades, a series of aviation incidents have demonstrated the devastating impact that unaddressed mental health issues can have on flight safety. These real-world cases provide a lens through which to examine the consequences of psychological distress among flight crew, including deliberate crashes, erratic behaviour, and violent actions. By analyzing these incidents, we gain insight into the gaps that have historically existed in aviation mental health policies and oversight. This section highlights key events that have shaped international discourse and reform efforts around pilot psychological screening and support systems.

II-3-a) Japan Airlines Flight 350 1983

The crash of Japan Airlines Flight 350 revealed critical regulatory shortcomings in mental health evaluation and monitoring. Captain Seiji Katagiri, who had previously been grounded in 1980 due to psychosomatic illness, was cleared to return to flight duty despite ongoing psychological instability (Deepak, 2019; Mulder & De Rooy, 2018). His increasingly erratic behaviour went unaddressed, culminating in his deliberate attempt to crash the aircraft, which killed 24 people (Deepak, 2019; Mulder & De Rooy, 2018). This case illustrates the failure of airline medical systems and regulatory bodies to ensure rigorous, continuous mental health evaluations, particularly after a prior grounding for psychiatric concerns.

II-3-b) FedEx Flight 705 1994

FedEx Flight 705 was nearly hijacked by Auburn Calloway, a flight engineer facing termination, who attacked the crew with the intent to crash the plane (Mulder & De Rooy, 2018).

Although the crew subdued him and landed safely, the incident revealed the potential for severe psychological distress and occupational stress to manifest in violent behaviour (Durham, 2019). Investigations showed that Calloway was under significant financial strain and had made suspicious insurance changes prior to the flight (Durham, 2019). This event highlighted the lack of mechanisms within aviation employment frameworks to detect and respond to psychological red flags, especially in employees at risk of disciplinary action or job loss.

II-3-c) SilkAir Flight 185 1997

SilkAir Flight 185's crash into the Musi River, killing all 104 on board, is widely believed to have been a deliberate act by the captain, though Indonesian authorities classified it as undetermined. The flight recorders ceased functioning shortly before the crash, raising suspicions of intentional disabling by the pilot (Deepak, 2019; Mulder & De Rooy, 2018). The captain had reportedly faced financial issues and regulatory disciplinary actions, yet there was no formal psychological assessment recorded (Mulder & De Rooy, 2018). This case demonstrates how financial and professional pressures, when left unaddressed, can escalate—and how limitations in flight data monitoring and international investigative consistency hinder full transparency in identifying pilot mental health risks.

II-3-d) EgyptAir Flight 990 1999

The crash of EgyptAir Flight 990, attributed by U.S. authorities to deliberate action by the first officer, resulted in 217 fatalities (Deepak, 2019). After the captain left the cockpit, the first officer initiated a fatal descent, allegedly resisting recovery efforts (Durham, 2019). Despite the NTSB's findings, Egyptian investigators insisted on mechanical failure, revealing how geopolitical or institutional interests can affect the acknowledgment of mental health as a contributing factor (Mulder & De Rooy, 2018; Durham, 2019). This case illustrates the lack of

uniform global standards in investigating and reporting incidents potentially linked to psychological distress, as well as gaps in monitoring behavioural concerns when no formal mental illness diagnosis is present.

II-3-e) JetBlue Flight 191 2012

Captain Clayton Osbon's erratic behaviour on JetBlue Flight 191, including incoherent speech and threats of crashing the plane, led the first officer to lock him out of the cockpit and divert the flight (Miller & Assas, 2024). Osbon was later found not guilty by reason of insanity. Reports suggested that the airline may have been aware of concerns regarding his mental fitness, raising questions about employer responsibility in monitoring and responding to behavioural warning signs (Mulder & De Rooy, 2018). This incident highlights weaknesses in pre-flight mental health checks and the absence of clear accountability for airlines in ensuring crew psychological readiness.

II-3-f) LAM Mozambique Airlines Flight 470 2013

Flight 470 crashed after the captain, alone in the cockpit, disengaged the autopilot and directed the plane into the ground, killing all 33 on board (Mulder & De Rooy, 2018). Although he had no documented mental illness, he was reportedly under significant psychological strain due to personal tragedies and a divorce (Mulder & De Rooy, 2018). The lack of formal mental health evaluations, especially during periods of significant life stress, points to an oversight in standard operating procedures for assessing a pilot's mental fitness. This case also underscores the limitations of current cockpit security rules, which do not guarantee monitoring of the pilot's psychological state once the door is locked.

II-3-g) Germanwings Flight 9525 2015

Germanwings Flight 9525 was deliberately crashed by the co-pilot, Andreas Lubitz, who locked the captain out of the cockpit and initiated a descent that killed all 150 onboard (Miller & Assas, 2024). Lubitz had a known history of depression and suicidal ideation and had previously been denied a medical certificate (Deepak, 2019; Miller & Assas, 2024). Although he later received a conditional certificate with required follow-ups, he concealed his worsening condition and use of unapproved medications (Deepak, 2019; Durham, 2019). The absence of mandatory reporting systems for healthcare providers and the overreliance on pilot self-disclosure allowed critical information to remain hidden. This case led to regulatory changes in the EU, but it remains a clear example of systemic failure in mental health oversight and inter-institutional communication.

II-4) Chapter Summary

This chapter explored the intersection of mental health and aviation by reviewing existing research on stigma, depression, anxiety, and ADHD among pilots, as well as real-world aviation incidents linked to psychological distress. While the literature reveals increased awareness of these issues, it also highlights ongoing gaps in early intervention, regulatory flexibility, and support structures. These gaps inform the need for a critical examination of how mental health is regulated and conceptualized in aviation policy. The following chapter introduces the theoretical approach guiding this thesis, Critical Theory, and explains its relevance in challenging existing power structures and advocating for more inclusive, human-centred regulatory frameworks.

CHAPTER III: THEORETICAL APPROACH

III-1) Chapter Overview

This chapter presents the theoretical foundation for the thesis: Critical Theory. Critical Theory offers a lens to examine how institutional power structures, such as aviation regulatory systems, produce, sustain, or obscure social inequalities. The chapter first introduces the historical development and core components of Critical Theory, then explains why this approach is particularly suited for analyzing mental health policies in aviation. Finally, it presents the rationale for its use in this research, alongside an acknowledgment of its limitations and how the thesis addresses them. This chapter sets the stage for the methodological approach that follows.

III-2) Overview of Theoretical Approach

Critical Theory emerged in the 1930s through scholars associated with the University of Frankfurt's Institute for Social Research in Germany (Celikates & Flynn, 2023). Under figures such as Max Horkheimer, Theodor Adorno, and Herbert Marcuse, the Frankfurt School developed Critical Theory as a response to traditional Marxist thought by examining not only economic structures but also cultural, ideological, and psychological aspects of modern capitalist societies (Celikates & Flynn, 2023). According to Celikates and Flynn, the theory arose during a period marked by economic instability, the rise of fascist movements, and accelerating industrialization. It sought to critique both the failures of liberal democracy and the limitations of orthodox Marxism, advocating for an interdisciplinary approach to social research.

The fundamental purpose of Critical Theory is human liberation (Celikates & Flynn, 2023). As Celikates and Flynn explain, the approach interrogates power systems and social institutions to reveal how they maintain domination and social inequality. Critical Theory is distinct from purely descriptive approaches because it emphasizes that all knowledge arises from

specific social and historical contexts. Its essential elements include: (1) immanent critique, which exposes discrepancies between societal practices and ideals; (2) ideology critique, which uncovers hidden mechanisms of power; and (3) praxis, which combines theoretical understanding with practical action aimed at societal transformation (Celikates & Flynn, 2023). While Critical Theory has expanded to address contemporary issues such as race, gender, colonialism, and environmental injustice, its core objective remains unchanged: to challenge existing power structures and pursue a more just and democratic society (Celikates & Flynn, 2023).

III-3) Rationale for Using the Chosen Theoretical Approach

Critical Theory provides a powerful framework for analyzing how aviation's institutional and regulatory systems, particularly those addressing mental health, function not only to promote safety but also to discipline, surveil, and control pilots. As the literature review demonstrated, pilot mental health regulations often reflect broader ideologies around risk, productivity, and public safety, while also contributing to stigma and the silencing of psychological distress. This thesis builds on that foundation by using Critical Theory to critically examine aviation medical frameworks—such as those established by ICAO, EASA, and the FAA—and how they construct "fitness" in ways that may exclude or penalize pilots with mental health conditions. It also engages with themes of surveillance and self-censorship, particularly where policies discourage disclosure due to fears of career loss or grounding. Through this lens, the analysis problematizes not only what is regulated, but why, and in whose interest.

Moreover, Critical Theory aligns with the methodological approach of this thesis, including the content analysis of regulations and the case study review of aviation incidents involving psychological factors. It enables a deeper critique of the assumptions underpinning institutional responses to pilot mental health and challenges the notion that safety and justice are always mutually reinforcing.

However, Critical Theory is not without limitations. It has been critiqued for its reliance on subjective social values, which can lead to conflict when different ideological perspectives clash without a clear resolution (Stokes-Rice, 2025). Another challenge is that while Critical Theory excels at deconstruction, it does not always offer concrete pathways for policy reform (Jahn, 2021). This thesis addresses these challenges by proposing pragmatic and informed recommendations drawn from a critical analysis.

III-4) Chapter Summary

This chapter outlined the foundations and relevance of Critical Theory as the guiding theoretical lens for this thesis. By exploring how regulatory systems can uphold or challenge power dynamics, Critical Theory provides a meaningful way to interrogate the structures shaping pilot mental health policies across jurisdictions. Its emphasis on systemic critique and social justice complements the study's focus on regulation, stigma, and pilot well-being. The following chapter builds on this foundation by discussing the methodology used to collect and analyze data and by identifying the limitations of the methodological approach.

CHAPTER IV: METHODOLOGY AND RESEARCH DESIGN

IV-1) Chapter Overview

This chapter outlines the qualitative methodological approach used to examine and compare mental health regulations for commercial pilots across seven jurisdictions. Guided by the research question regarding the similarities and differences in pilot mental health policy, the chapter introduces the comparative and descriptive research designs that structure the study. It also reiterates the rationale for using content analysis to examine aviation regulatory documents, airline policies, and aviation incident reports. The chapter is organized into sections detailing the methodological framework, data collection and analysis procedures, and limitations. These elements lay the foundation for understanding how data was gathered, interpreted, and evaluated in relation to the thesis objectives.

IV-2) Overview of Methodological Approach

This study employs a qualitative research methodology with comparative and descriptive research designs to explore how mental health is addressed in aviation regulations and policies across seven jurisdictions: New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and international standards. These jurisdictions were selected due to their distinct regulatory frameworks, varying cultural attitudes toward mental health, and significance within the global aviation industry, making them suitable for cross-national comparison. The qualitative methodology is well-suited for analyzing textual, regulatory, and archival data, enabling a detailed understanding of how mental health policies are constructed, enacted, and experienced by pilots. By applying content analysis to regulatory documents, fitness-to-fly guidelines, and aviation incident reports, the study identifies patterns and themes

that contribute to answering the research question on the relationship between aviation policies and pilot mental health.

The study follows a purposive sampling strategy, drawing from publicly accessible data sources, including national and international aviation regulations, airline policies, and aviation incident reports. The sample of incident reports consists of 355 cases from the Bureau of Aircraft Incidents Archives (2000-2025), with 35 selected based on explicit mentions of psychological factors such as mental health issues, stress, fatigue, or workload in the "probable cause" section. This focused sampling strategy ensures a relevant dataset that supports the research goals and provides reliable findings within the scope of the selected jurisdictions.

IV-3) Description of Methodology

The primary method used in this study is content analysis, a qualitative technique that systematically examines written documents to identify patterns, themes, and meanings within the data. Content analysis was applied to regulatory materials, airline policies, academic literature, and aviation incident reports to gain insights into how mental health is conceptualized, regulated, and addressed in the commercial aviation sector. This method involves interpreting textual content and categorizing key terms and policy references related to mental health, pilot well-being, and regulatory fitness standards. Specific attention was given to terms such as "fitness-to-fly," "depression," "stress," "reporting obligations," "mental health," "stigma," and "confidentiality," which reveal the regulatory stance on mental health issues.

Content analysis is an appropriate method for this research, as it allows for a deep exploration of policy language and regulatory structures. It also supports the comparative and descriptive research designs by facilitating an examination of how each country or regulatory body frames mental health-related issues. This methodology enables the use of both primary sources, such as legal documents and international guidelines, and secondary sources, such as academic literature and incident data, to develop a coherent analysis of current mental health policies affecting commercial pilots.

IV-4) Collection and Analysis of Data and Information

Data collection in this study is drawn from two primary sources: regulatory documents and aviation incident reports. Regulatory materials were obtained from national aviation authorities, including the FAA (United States), Transport Canada, CASA (Australia), CAA (United Kingdom and New Zealand), and EASA. International standards, such as those outlined in ICAO Document 8984, were also used to provide a global point of comparison.

The second source of data consists of aviation incident reports retrieved from the Bureau of Aircraft Incidents Archives, focusing on incidents between 2000 and 2025. A total of 355 reports were selected based on two criteria: "Human Factor" as the cause and "Scheduled Revenue Flight" as the flight type. Within this dataset, 35 cases were identified where psychological or mental health-related factors were explicitly mentioned in the "probable cause" section. These cases were documented and categorized in a Google Sheets spreadsheet, with fields such as date, aircraft type, location, country, number of fatalities, and mental health-related factors involved.

In addition to regulatory and incident data, academic literature from 2016 to 2025 was collected through Google and Google Scholar. Search terms included "pilot mental health," "fitness-to-fly regulations," "aviation regulations discrimination," "airline policy," and "pilot well-being." Literature annotations were stored in a Google Sheets document and organized into thematic categories, such as depression, anxiety, ADHD, stigma, and well-being. To support the literature review process, AI-powered tools such as Pi AI and ChatGPT (Inflection AI, 2023; OpenAI,

2023) were used to summarize methodologies and highlight key findings, with all AI-generated content verified and refined manually. Additionally, Grammarly was used to assist in editing punctuation, grammar, and sentence structure (Grammarly, 2025).

Data analysis was carried out using qualitative content analysis. Regulatory documents were reviewed to identify how different jurisdictions define and manage mental health issues in aviation, including processes for medical certification, mandatory reporting, and mental health disclosure. Incident reports were analyzed to assess how mental health-related factors may have contributed to accidents or incidents. Spreadsheet filters and thematic coding techniques were employed to identify cross-jurisdictional patterns and evaluate trends in pilot mental health support and regulatory response. This approach facilitated a detailed comparison across countries and helped identify gaps, inconsistencies, or potential areas for reform in global aviation mental health policy.

IV-5) Limitations in Methodology

Several limitations exist within the methodological approach of this study. First, the availability of regulatory and policy documents may be restricted due to corporate confidentiality or limited public access, potentially reducing the dataset size. The transparency and format of regulatory documentation can also vary across countries, making direct comparison more challenging. Second, content analysis is subject to interpretation, and the identification of mental health themes or discriminatory practices may depend on the researcher's judgment. Although consistent coding criteria and manual verification were applied, the potential for bias remains. While AI tools assisted with literature summarization, they posed a risk of oversimplification and context omission, which was mitigated through accuracy reviews. Third, the study focuses on major aviation jurisdictions, meaning its findings may not be applicable to smaller or

less-regulated regions, where mental health policies may be less formalized or not publicly documented. Lastly, although the study examines 35 aviation incidents, this sample represents only a small fraction of global incidents and may not capture the full spectrum of mental health-related challenges faced by commercial pilots.

Despite these limitations, the research design remains robust and appropriate for addressing the study's aims. Content analysis and comparative research provide a valuable framework for identifying how regulatory structures shape the treatment of mental health in commercial aviation. The findings highlight the effectiveness and shortcomings of current policies, while establishing a foundation for future research and policy development in pilot mental health.

IV-6) Chapter Summary

This chapter discussed the qualitative, document-based approach used to explore how mental health is regulated and conceptualized across commercial aviation systems in seven key jurisdictions. The study analyzed regulatory texts, airline policies, and 35 incident reports selected from a larger dataset of 355 aviation cases. Challenges such as limited access to some documents, regulatory inconsistencies, and potential subjectivity in interpreting mental health themes were mitigated through manual verification, consistent coding, and transparency in data sourcing. The methodology was well-suited for analyzing both policy language and institutional attitudes toward mental health, aligning with the critical theory framework guiding this thesis. The findings generated from this analysis are presented in the next chapter, which examines data trends, jurisdictional comparisons, and their implications for mental health support in aviation.

CHAPTER V: DATA ANALYSIS AND RESULTS

V-1) Chapter Overview

This chapter presents the results of a comprehensive qualitative analysis of aviation mental health policies, screening protocols, and related incident data across seven jurisdictions: New Zealand, the United Kingdom, Australia, Canada, the United States, the European Union, and international standards set by ICAO. The aim of this chapter is to answer the core research question by identifying key similarities, differences, and patterns in how mental health is conceptualized and regulated within aviation systems. Data were drawn from over 350 incident reports and dozens of regulatory documents, with 35 cases involving psychological factors selected for detailed review. This chapter is organized by jurisdiction, followed by a cross-cutting thematic analysis that explores central trends such as fatigue, stress, substance use, and suicide. Through this structure, the chapter outlines both the strengths and limitations of current mental health frameworks and highlights the regulatory and cultural disparities influencing pilot well-being and flight safety.

V-2) Data and Information Analysis

V-2-a) Collection of Data and Information

The research data were gathered between January and April 2025 from multiple publicly available sources. The research relied on regulatory documents issued by national aviation authorities, including the FAA, CASA, EASA, CAA, and Transport Canada, as well as ICAO. The Bureau of Aircraft Incidents Archives provided 355 aviation incident reports, which were filtered to include only those with "Human Factor" and "Scheduled Revenue Flight" classifications. The research focused on analyzing 35 psychological incidents extracted from the total dataset. Academic publications from 2016 to 2025 were incorporated to establish a thematic
background. The main difficulty arose from handling incomplete, irregularly presented regulatory data and limited data availability. This issue was addressed by verifying official documents through multiple government websites and official verification sources. The gathered data were structured into sections within a Google Document to analyze major patterns and regulatory variations between different jurisdictions regarding mental health standards and flight incidents.

V-2-b) Analysis of Data and Information

Seven aviation jurisdictions were analyzed through qualitative content analysis to identify patterns, themes, and regulatory trends. The study included the examination of mental health policies, fitness-to-fly criteria, and medical certification protocols, as well as the review of 35 aviation incidents involving psychological factors. The analysis faced a major challenge due to the varying levels of clarity and accessibility of the regulations, particularly Canada's limited transparency and the fragmented documentation from the U.S. This challenge was overcome through careful cross-comparison and annotation. The analysis revealed that fatigue and psychological stress were common in incident reports and that many jurisdictions have mental health policies. However, these policies are often inflexible and lack progressive adaptation. The most significant finding was the need for more dynamic and inclusive mental health frameworks that focus not only on disqualification but also on the long-term well-being of pilots.

V-3) Results From Jurisdictional Documents

V-3-a) New Zealand

Screening Procedure

The CAA of New Zealand introduced updated medical standards under the Civil Aviation Rules Part 67: Medical Standards and Certification on April 5, 2025. These new regulations

establish mental health requirements for medical certifications, including a class one certification for commercial pilots. The CAA New Zealand Examination Procedure Document provides general medical examination guidelines but does not offer a dedicated or structured process for psychological screening beyond broad psychiatric evaluations.

According to the Examination Procedure Document, the mental health screening procedure in New Zealand is incorporated into the initial medical examination required for certification (Civil Aviation Authority of New Zealand, 2020). The examination, conducted by a Designated Medical Examiner, includes a review of the applicant's medical history, a general psychiatric screening, and an overall assessment of the applicant's physical and mental health. However, the screening does not appear to involve structured psychological tests or standardized assessments for cognitive function or emotional stability. Any abnormalities or medical conditions identified during this process must be reported using specific CAA forms, depending on the nature of the condition. For applicants with a documented history of mental health conditions, additional psychiatric evaluations may be required at the discretion of the medical examiner or the CAA's licensing authority.

In the Civil Aviation Rules Part 67: Medical Standards and Certification document, under the Nervous System subsection (67.103(c)), pilots must not have any history or diagnosis of psychiatric, psychological, cognitive, or behavioural disorders that are considered "of aeromedical significance"—meaning they could interfere with the pilot's ability to safely perform their duties (Civil Aviation Authority of New Zealand, 2024, s. 67.3). These disqualifying conditions include, but are not limited to, psychotic disorders, personality disorders, mental abnormalities, neuroses, depression, post-traumatic stress disorder (PTSD), cognitive disorders, and any sequelae of head injury or neurosurgical procedures. If any of these conditions are diagnosed and deemed significant enough to affect flight safety, the applicant would not meet the standards.

The regulation also explicitly prohibits the use of psychoactive substances, defined as: "alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents," with the exception of coffee and tobacco (Civil Aviation Authority of New Zealand, 2024, s. 67.3). Pilots must not have a history of using or currently taking any of these substances if they interfere with or are likely to interfere with flight safety. The use of these substances is treated as aeromedically significant and may result in disqualification. Beyond substance use, pilots must not be taking any medications or undergoing treatment that may impair their ability to perform aviation duties. This includes any side effects from treatment that might impact cognitive or physical functioning in flight. The regulation emphasizes "to an extent that is of aeromedical significance." This means that not all conditions are automatic disqualifiers; it depends on the severity, impact on functioning, and potential risk in the aviation context (Civil Aviation Authority of New Zealand, 2024, s. 67.103).

The mental health requirements and disqualification criteria focus on assessing the functional impact of psychiatric conditions rather than issuing automatic disqualifications. However, applicants with a history of severe psychiatric disorders, including psychosis or significant personality disorders, may be deemed permanently unfit if the condition is considered a persistent threat to flight safety. For conditions such as depression, PTSD, or anxiety disorders, certification may still be possible if the applicant demonstrates long-term stability and is free from symptoms that could interfere with cognitive performance.

Although individual cases are considered, the CAA has noted that it allows some applicants for Class 1, 2, or 3 medical certificates to be certified while on well-controlled

antidepressant medication (Civil Aviation Authority of New Zealand, 2013). However, there are several factors to consider, including the severity and history of depression, whether it was a single episode or recurrent, the circumstances surrounding the episode, and the effectiveness of treatment. The type of antidepressant used is also an important factor, as some medications are considered safer for aviation than others. The CAA has determined that Sertraline, Citalopram, and Fluoxetine are the safest options, whereas Paroxetine, Venlafaxine, and other antidepressants are not currently deemed reliable for aviation safety. Additionally, newer antidepressants may be approved in the future, but only after substantial medical research confirms their safety. Therefore, not all applicants on antidepressant medication will be considered fit for certification, as decisions seem to be made on a case-by-case basis.

Substance Abuse

The CAA of New Zealand also provides guidelines regarding alcohol and drug use among pilots, recognizing the serious risks these substances pose to aviation safety. Medical Examiners assess alcohol and drug use patterns by reviewing self-reported history, collateral information, and medical data to determine whether a pilot has a potentially unsafe relationship with substances (Civil Aviation Authority of New Zealand, 2025). The CAA highlights several warning signs that could indicate problematic alcohol or drug usage because self-reporting is often unreliable. These include drink-driving offences, exceeding recommended alcohol consumption limits, a history of substance abuse, abnormal blood test results, mental health conditions linked to substance use, and failure to comply with past monitoring requirements. If any of these red flags are present, the medical examiner is required to obtain more information and cannot issue a medical certificate until they are fully satisfied that there are no safety risks.

For pilots with identified alcohol or drug issues, the CAA enforces strict medical surveillance requirements to ensure ongoing safety compliance. These requirements include psychiatric evaluations, specialist reports from addiction medicine professionals, monitoring by aviation employers or sponsors, and regular biochemical testing, such as liver function tests, carbohydrate-deficient transferrin assays, and ethyl glucuronide tests (Civil Aviation Authority of New Zealand, 2025). Pilots who have previously lost certification due to alcohol or drug use must be able to show long-term stability before being allowed to return to duty. If a pilot fails to comply with surveillance conditions or has abnormal test results, their medical certification may be suspended or revoked.

For drug use, a first-time applicant with a remote history (over five years ago) and no other risk factors may be considered fit for certification after passing comprehensive drug screening tests (Civil Aviation Authority of New Zealand, 2025). However, applicants with a history of addiction, recent or ongoing drug use, or a positive drug test result will not be certified and will need to undergo the statutory flexibility process before they can be re-examined. The CAA follows a zero-tolerance policy regarding substance impairment in safety-critical roles to ensure that pilots cannot operate under the influence of performance-impairing substances. Simply abstaining from substances while on duty is not enough; pilots must prove that their substance use does not impact their cognitive function, decision-making, or aviation performance at any time.

V-3-b) United Kingdom

Screening Procedure

The Civil Aviation Authority (CAA) of the United Kingdom has implemented rigorous mental health screening procedures for commercial pilots to ensure both aviation safety and psychological fitness. As outlined in their Mental Health Guidance Material, applicants undergo an initial Class 1 medical examination where they are evaluated for any current or historical psychological conditions that could affect their ability to operate safely (UK Civil Aviation Authority, n.d.-a). This evaluation considers a broad range of influences, including social, environmental, and cultural factors, and assesses the applicant's perspective on mental health, their ability to recognize mental health issues in themselves or others, and their coping mechanisms for managing stress.

The mental health screening also explores behavioural history, interpersonal relationships, personal and professional stressors, and any observable signs of personality disorders (UK Civil Aviation Authority, n.d.-a). If any concerns are identified during this process, the applicant is referred for a specialist psychiatric evaluation. The revalidation or renewal of a Class 1 certificate involves reassessing mental health to determine current stress levels, coping strategies, and any interpersonal or operational difficulties, such as problems with crew resource management (CRM). Behavioural red flags, such as conflicts with colleagues, performance issues during training, or documented behavioural incidents, may prompt further psychiatric review.

Certain psychiatric conditions may lead to automatic disqualification unless a comprehensive specialist evaluation confirms the individual's fitness. These include mood disorders, neurotic and personality disorders, a history of deliberate self-harm or suicidal behaviour, and psychotic disorders such as schizophrenia, delusional disorders, or schizotypal personality disorder (UK Civil Aviation Authority, n.d.-a). According to the UK CAA's Guidance for Psychiatric Reports, these evaluations are recommended to follow a structured format that includes a detailed history of the condition, current symptoms, previous psychiatric

and medical background, family history, and any treatments such as psychotherapy or medications (UK Civil Aviation Authority, 2022). The reports should address treatment side effects, compliance, prognosis, and the risk of relapse, especially in terms of whether symptoms may impair cognitive or behavioural functioning relevant to flying.

Furthermore, the Guidance for Psychiatric Reports explains that clinicians should assess for symptoms such as fatigue, panic attacks, impaired concentration, delusions, or suicidal ideation, and determine whether these could lead to partial or complete aeromedical incapacitation (UK Civil Aviation Authority, 2022). The concept of the "1% rule" is applied in these evaluations, setting a threshold for acceptable risk of incapacitation—no more than a 1% chance per year in multi-crew operations, and an even lower risk in solo public transport flying. Where precise risk is difficult to quantify, an acceptable threshold is one that does not exceed the risk level of healthy peers. Additionally, the use of psychoactive medications, such as antidepressants, sedatives, stimulants, or antipsychotics, may also disqualify an applicant if they impair cognitive or motor functioning (UK Civil Aviation Authority, n.d.-a). However, in some cases, selective serotonin reuptake inhibitors (SSRIs) may be allowed under closely monitored conditions.

Substance Abuse

In addition to mental health screening, the UK CAA maintains strict procedures for detecting and managing substance use among commercial pilots. During the initial Class 1 medical examination, mandatory drug and alcohol screening is conducted. This includes testing for substances such as opioids, cannabis, amphetamines, cocaine, hallucinogens, and sedative-hypnotics (UK Civil Aviation Authority, n.d.-a). Substance screening is also conducted randomly or during revalidation based on observed risk factors or concerns during operational

duties (UK Civil Aviation Authority, n.d.-a). The UK CAA provides official procedural guidance to Aeromedical Centres (AeMCs) conducting these screenings, with formal testing policies aligned with national and European workplace drug testing standards. For drug testing, swab-based screening tools are used, while alcohol breath tests are conducted with certified devices (UK Civil Aviation Authority, 2024). A positive result is defined as a breath alcohol level over nine micrograms per 100 mL or a non-negative drug test result.

If a positive screening occurs, immediate confirmatory testing is required, including "blood or evidential-quality breathalyser for alcohol level and/or evidential-quality saliva, urine, or hair testing for opioids, cannabinoids, amphetamines, cocaine, hallucinogens, and sedatives" (UK Civil Aviation Authority, 2024, p. 2). Confirmatory testing must be performed by accredited laboratories using reliable methods. If a confirmed positive result is obtained, the applicant is referred to the UK CAA for further review. A specialist aeromedical review is required within two months of the initial examination, which may involve additional blood or hair testing to assess ongoing use or recovery status. If the applicant has a known history of substance misuse, they must automatically undergo screening and be referred for assessment. After the review, surveillance may continue. Applicants deemed unfit or placed under conditional certification may be required to undergo periodic follow-up testing, especially if their medical history or test results suggest an ongoing risk (UK Civil Aviation Authority, 2024).

A history of substance misuse or dependence is generally disqualifying unless the applicant can demonstrate a sustained period of recovery. In such cases, further evaluation by a psychiatric or aviation medicine specialist is required to confirm stability and assess ongoing risk (UK Civil Aviation Authority, n.d.-a). Additionally, the use of cannabis-based products is

prohibited due to the risk of contamination with psychoactive compounds and the potential for cognitive or psychomotor impairment.

Nuerodevelopemtal Conditions

The UK CAA also outlines the assessment of developmental conditions, including dyslexia, autism spectrum disorder (ASD), and ADHD, on a case-by-case basis for aeromedical certification (UK Civil Aviation Authority, n.d.-b). Regarding dyslexia, pilots must independently read checklists, weather reports, and instrument displays, making certain adjustments impractical. If an applicant successfully completes training without reading or writing assistance, they may qualify for a pilot or air traffic control career. ASD is not automatically disgualifying for aeromedical certification. Applicants must provide neuropsychology, psychology, or psychiatric reports, and may be required to undergo an assessment with an aviation clinical psychologist. If certified, they may proceed with flight or air traffic control training, with progress monitoring. ADHD is assessed based on symptom persistence and medication use. ADHD applicants are not automatically disqualified, although the use of stimulant medications for ADHD treatment remains unacceptable for certification due to potential cognitive and behavioural side effects. Applicants who have stopped their medication must undergo an observation period to assess the effects of their symptoms before their certification can be considered. Those seeking certification must provide all past neuropsychological and psychiatric reports and may be required to undergo an updated assessment by an aviation psychologist. If deemed fit, they may continue flying.

V-3-c) Australia

Screening Procedure

The Civil Aviation Safety Authority (CASA) of Australia outlines a detailed and cautious approach to assessing mental health conditions in pilots in the *Guidelines: Medical Assessment for Aviation*. These conditions include, but are not limited to, mood disorders (e.g., depression and bipolar disorder), anxiety disorders, PTSD, personality disorders, substance use disorders, and psychotic conditions like schizophrenia (Civil Aviation Safety Authority, 2024). CASA acknowledges that psychiatric conditions can impair judgment, attention, decision-making, and impulse control, and both the conditions themselves and their treatments, particularly medication side effects, may negatively affect pilot performance. Additionally, environmental stressors in aviation, such as high workload, fatigue, and emergency situations, can exacerbate or trigger psychiatric symptoms, especially in individuals already vulnerable to mental health challenges.

Pilots are required to declare any current or past mental health diagnoses, including major depression, severe anxiety, schizophrenia, PTSD, bipolar disorder, history of self-harm, or ongoing psychological treatment. These disclosures necessitate a formal medical assessment, as certain mental health conditions, particularly those associated with psychosis or high recurrence rates, are considered incompatible with aviation duties.

CASA places significant emphasis on a thorough risk assessment during the medical evaluation process (Civil Aviation Safety Authority, 2024). This includes evaluating the applicant's symptoms, medication use, risk of recurrence, and treatment history. A key concern is underreporting, as pilots may hesitate to disclose mental health conditions due to stigma or fear of losing certification. However, CASA notes that mental health diagnoses do not automatically result in disqualification. Pilots may still be certified if their condition is well-managed, in

remission, and does not pose a risk to flight safety. The assessment also investigates whether symptoms such as difficulty concentrating, low energy, suicidal thoughts, or psychosis are present, and whether medications cause side effects like drowsiness or visual disturbances.

Other factors considered include the chronicity and recurrence risk of the disorder, any history of self-harm or suicide risk, and the presence of co-occurring medical or substance-related conditions (Civil Aviation Safety Authority, 2024). A favourable assessment requires evidence of symptom remission for at least 12 months, stable treatment, no history of psychosis or self-harm, and the absence of significant side effects or comorbidities. Applicants who meet these criteria and demonstrate an understanding of how their condition relates to aviation safety may be approved for certification. However, referral for further specialist evaluation is necessary if symptoms are active, cognitive or behavioural impairments are present, the condition is likely to recur or resist treatment, or if there is a history of self-harm or psychotic symptoms.

Substance Abuse

CASA also outlines strict guidelines regarding substance use and misuse, recognizing the serious risks that alcohol and other drugs pose to aviation safety (Civil Aviation Safety Authority, 2024). Individuals exhibiting signs of substance dependence must undergo a medical evaluation. Indicators of dependence include increased tolerance, withdrawal symptoms, neglect of responsibilities, repeated failed attempts to quit, prolonged or excessive use, and continued use despite health consequences. Pilots must disclose any substance use concerns, but underreporting is common due to the fear of losing certification. Therefore, CASA recommends that medical assessments incorporate objective measures, including clinical interviews, standardized tools like the AUDIT questionnaire, and biological testing. Risk factors such as a history of DUI

convictions and evidence of cognitive or organ-related impairments, such as neurological damage or liver dysfunction, are also considered.

Alcohol misuse has been associated with performance degradation in flight simulations, including delayed reaction times, impaired coordination, poor workload management, and reduced visual scanning (Civil Aviation Safety Authority, 2024). Chronic alcohol abuse may result in neurocognitive deficits and organ damage, particularly to the brain and nervous system. Withdrawal from alcohol also poses significant risks, including seizures and hallucinations. CASA recommends that applicants demonstrate at least three months of sustained abstinence, verified through biological testing, with no signs of cognitive impairment or organ damage, before being considered for certification.

CASA also identifies other substances, such as opioids, cannabis, stimulants, cocaine, and hallucinogens, that can severely impair cognition, behaviour, and decision-making (Civil Aviation Safety Authority, 2024). When assessing drug use, CASA recommends comprehensive evaluations that include determining the substance(s) used, current use status, signs of physical harm, and cognitive or behavioural effects. Objective testing methods such as oral fluid, urine, blood, or hair testing are recommended, with hair testing offering the longest detection window. Certification may be considered only after applicants demonstrate at least three months of abstinence and are free from cognitive deficits or medical complications resulting from substance use. Further specialist evaluation is required if the substance use disorder remains symptomatic, treatment has failed, or the individual is non-compliant with medical guidance.

Nuerodevelopemtal Conditions

CASA also addresses neurodevelopmental conditions, recognizing the cognitive and behavioural demands associated with piloting. Conditions such as ADHD, dyslexia, ASD, and

intellectual disabilities present challenges in attention, communication, coordination, and emotional regulation (Civil Aviation Safety Authority, 2024). CASA identifies ADHD as a condition that may impair concentration, impulse control, and organizational ability. Not all individuals with ADHD are automatically disqualified; assessments are based on the severity and impact of symptoms. Pilots with suspected or diagnosed ADHD must undergo a comprehensive neuropsychological evaluation, including tests of learning, memory, executive functioning, and emotional regulation. If ADHD is well-controlled, asymptomatic, and does not interfere with safe flight performance, certification may be considered. However, persistent symptoms, reliance on disqualifying medication, or functional impairment can result in referral for further assessment or denial of certification.

Regarding dyslexia, CASA acknowledges it as a recognized disability but emphasizes that aviation safety takes precedence over reasonable adjustments that may be acceptable in other fields (Civil Aviation Safety Authority, 2024). Pilots with dyslexia must demonstrate sufficient reading and comprehension skills independently. Successful completion of pilot training and meeting licensing standards serve as evidence that the condition does not compromise aviation safety. However, if ongoing assistance or task modifications are necessary, applicants must be referred to CASA for evaluation of alternative medical certification options.

For individuals with ASD, CASA takes an individualized approach. While some individuals with ASD may excel in attention to detail and cognitive ability, others may experience challenges with social interaction, adaptability, sensory processing, or emotional regulation (Civil Aviation Safety Authority, 2024). CASA emphasizes the need for comprehensive psychological assessments, including neuropsychological testing, occupational functioning reviews, and simulator evaluations. Applicants must demonstrate their ability to

manage communication demands, regulate emotions effectively, and respond to dynamic in-flight scenarios.

Intellectual disabilities, also referred to as intellectual developmental disorders, involve limitations in reasoning, learning, and adaptive behaviour (Civil Aviation Safety Authority, 2024). CASA recognizes that the severity of these conditions varies and thus reviews each case individually. Intellectual disabilities can affect cognitive performance, memory, communication, and the ability to respond to complex or high-pressure scenarios. While CASA generally considers intellectual disabilities a significant challenge to medical certification due to the functional limitations involved, individuals who demonstrate independent functioning and no impairments affecting aviation duties may be eligible under specific circumstances.

For all neurodevelopmental conditions, CASA emphasizes the importance of risk-based medical evaluations, prioritizing the applicant's demonstrated abilities and the absence of aviation-relevant impairments. In many cases, a formal neuropsychological assessment is required to determine eligibility. CASA's approach balances inclusivity with strict safety standards, ensuring that only individuals who can fully meet the demands of flight are certified.

V-3-d) Canada

Screening Procedure

Transport Canada's approach to mental health screening for commercial pilots holding or applying for a Category 1 medical certificate is guided by a combination of regulatory standards and individualized medical assessments. According to the Canadian Aviation Regulations (CARs), pilots must be free from any mental condition that could impair their ability to operate an aircraft safely (Transport Canada, 2015a). Specifically, Section 424.17(4) states that applicants must not have any psychiatric disorder, whether active or in remission, that could

result in functional impairment during flight operations. This includes any history of psychosis, established neurosis, behavioural and personal disorders, and "other significant mental abnormality" (Transport Canada, 2015a, ss. 424.17(4)(1.3)).

Transport Canada does not provide publicly available screening procedures for determining mental fitness. The Civil Aviation Medical Examiners (CAMEs) are required to conduct the examination in accordance with both recognized medical standards and the applicable personnel licensing regulations, document their clinical observations, and, if applicable, indicate the specific category of medical certificate the applicant qualifies for based on the findings. The completed medical examination report, along with any additional medical documentation needed to assess the applicant's fitness for the license, permit, or rating, must then be forwarded to Transport Canada (Transport Canada, 2015b). If concerns arise, the applicant may be referred for further psychiatric or psychological evaluation. It appears that meeting the standards is ultimately at the examiner's discretion and is assessed on an individual basis.

Additionally, Transport Canada recognizes that not all psychiatric conditions should result in permanent disqualification. The department has adopted a nuanced approach to assessing mental health conditions in pilots, particularly those treated with antidepressant medications. While the Canadian Aviation Regulations prohibit the issuance of a medical certificate to individuals with a history of psychosis or neurosis that may impair flight safety, the regulatory framework now accommodates specific cases involving depression and anxiety. In fact, the Handbook for Civil Aviation Medical Examiners notes that a blanket ban on conditions such as depression or anxiety may discourage pilots from seeking treatment, potentially compromising safety (Transport Canada, 2019). As a result, Transport Canada has developed a risk-based, case-by-case assessment protocol for non-psychotic mental health conditions,

particularly those treated with SSRIs. Conditions such as major depressive disorder, generalized anxiety disorder, dysthymia, adjustment disorders, and PTSD may be compatible with flying duties if the pilot demonstrates clinical stability.

To be eligible for certification while using SSRIs or similar medications, the pilot must meet specific criteria (Transport Canada, 2019). These include a stable dose for at least four months, the absence of aeromedically significant side effects, and a favourable psychiatric evaluation confirming the diagnosis, treatment response, and low risk of recurrence. In certain cases, neuropsychological testing may also be required to evaluate cognitive and functional capacity, particularly for commercial pilots who operate in complex or high-stress environments. Even for pilots who discontinue medication, Transport Canada may require a follow-up period to ensure sustained recovery. Commercial pilots using SSRIs and approved for certification are typically required to undergo psychiatric evaluations every six months for the duration of treatment and an additional six months after discontinuation to ensure continued stability. Any relapse, significant change in medication or dosage, or emergence of new symptoms must be reported and may result in temporary suspension of the medical certificate pending re-evaluation. *Substance Abuse*

There is limited publicly available information regarding how substance use is handled in aviation medical certification in Canada. However, Transport Canada outlines specific operational rules to ensure that all flight crew members are fit for duty. Under Section 602.02 of the Canadian Aviation Regulations, both operators and flight crew members share responsibility for determining whether an individual is physically and mentally capable of safely performing their duties (Canadian Aviation Regulations [CARs], SOR/96-433, s. 602.02). If there is any indication that a crew member is unfit or may become unfit, they are prohibited from engaging in

any flight-related tasks, including pre-flight responsibilities. Section 602.03 strictly forbids any crew member from operating an aircraft within 12 hours of consuming alcohol. Furthermore, individuals are not permitted to serve as crew members while under the influence of alcohol or while using any substance that could impair their cognitive or physical capabilities to a degree that may compromise the safety of the flight or passengers.

The Handbook for Civil Aviation Medical Examiners briefly addresses substance use in the context of medical evaluations. It advises examiners to be vigilant for any signs of substance abuse during assessments (Transport Canada, 2019). Substance dependence or abuse is considered disqualifying. However, once an individual enters recovery, Transport Canada may permit recertification following a case-by-case evaluation to determine the risk of relapse. In such cases, medical certification under a restricted category may be recommended. The handbook emphasizes that "continued abstinence is the key to medical recertification" (Transport Canada, 2019, Psychiatric Disease (3)).

V-3-e) United States

Screening Procedure

The Federal Aviation Administration (FAA, 2024) outlines its mental health regulatory standards in Title 14 of the Code of Federal Regulations, Part 67, specifically in Section 67.107, which defines disqualifying psychiatric conditions for first-class medical certification. These include personality disorders marked by repeated problematic behaviours, psychotic disorders involving symptoms such as delusions or hallucinations, bipolar disorder, and substance dependence. The FAA's Guide for Aviation Medical Examiners (AMEs) further expands on these standards and provides detailed screening procedures (Federal Aviation Administration, 2025). AMEs begin with a review of the applicant's reported history, focusing on their responses to

FAA Form 8500-8. Specifically, Item 18 requires applicants to disclose any history of mental health disorders, substance abuse, or suicide attempts. A positive response to Item 18.m (mental health), 18.n (substance use), or 18.p (suicide attempt) triggers a more in-depth evaluation. AMEs are required to gather supplementary details and refer the case to the FAA when significant concerns are identified. Although AMEs are not expected to perform formal psychiatric evaluations, they must form a general impression of the applicant's mental and emotional stability through conversation, appearance, and behaviour during the exam. Indicators such as disorganized speech, inappropriate affect, or inattentiveness may lead to the deferral of medical certification. Observations are recorded in Item 60 of the examination form, and if concerns persist, the applicant is deferred for further assessment by the FAA or a designated specialist.

The FAA categorizes certain psychiatric conditions as automatically disqualifying, unless reviewed under the Special Issuance process (Federal Aviation Administration, 2025). These include ADHD, bipolar disorder, personality disorders, psychosis, substance dependence or abuse, and suicide attempts. Any diagnosis of ADHD requires deferral. The FAA mandates a detailed neuropsychological evaluation, and ongoing symptoms or treatment with stimulants generally result in disqualification unless evaluated through the Human Intervention Motivation Study (HIMS) program. Regarding depression and anxiety, the FAA takes a nuanced approach. Mild cases of situational or adjustment-related depression or anxiety may be acceptable if the individual is not currently undergoing treatment, has been medication-free for at least two years, and has experienced no recurrences. For more significant diagnoses, such as major depressive disorder or generalized anxiety disorder, AMEs must defer the case to the FAA, and applicants must submit documentation from treating physicians or psychiatrists detailing their treatment history, symptom resolution, and risk of recurrence. If antidepressant medication is involved, the applicant may still qualify for certification through the FAA's Antidepressant Protocol, which requires at least six months of stability on an approved medication, no adverse side effects, and evaluation by a HIMS-certified AME.

The FAA exercises strict oversight regarding the use of psychoactive medications (Federal Aviation Administration, 2025). In general, the use of medications such as sedatives, tranquillizers, antipsychotics, and most antidepressants is considered disqualifying for medical certification due to their potential to impair cognitive and motor performance. However, under the FAA Antidepressant Protocol, certain medications are conditionally permitted through a Special Issuance Authorization. These include SSRIs such as fluoxetine (Prozac), sertraline (Zoloft), escitalopram (Lexapro), and citalopram (Celexa), if the individual has been stable on the same dosage for at least six months with no significant side effects or worsening of symptoms. In 2024, the FAA expanded this protocol to include additional medications, such as bupropion (Wellbutrin), as well as a dopamine and norepinephrine reuptake inhibitor. To qualify, applicants must undergo evaluation by a HIMS-certified AME, submit comprehensive treatment records, and, in some cases, complete neuropsychological testing. Use of multiple psychiatric medications, recent changes in dosage, or a history of severe symptoms like suicidal ideation or psychosis usually results in disqualification unless substantial evidence supports stability and safety for flight operations.

Substance Abuse

Under Title 14 of the Code of Federal Regulations, Part 67, Sections 67.107(a)(4), 67.207(a)(4), and 67.307(a)(4), no individual may hold a medical certificate if they have a clinical diagnosis of substance dependence unless they can demonstrate recovery and sustained

total abstinence for a minimum of two years (Federal Aviation Administration, 2024). Substance dependence is defined as a condition evidenced by increased tolerance, withdrawal symptoms, impaired control of use, or continued use despite negative impacts on health or functioning. Disqualifying substances include, but are not limited to, alcohol, sedatives, hypnotics, anxiolytics, opioids, central nervous system stimulants like cocaine and amphetamines, hallucinogens, cannabis, and inhalants. The FAA's regulatory definition encompasses the use of substances in hazardous situations, verified positive drug or alcohol test results (including a blood alcohol concentration of 0.04 or greater), refusals to test, or the misuse of any substance in a manner deemed by the Federal Air Surgeon to pose a risk to safe operation.

According to the FAA's Guide for Aviation Medical Examiners, individuals with a history of substance abuse or dependence may be eligible for medical certification through the FAA's Human Intervention Motivation Study (HIMS) program, a structured pathway that includes comprehensive evaluation, treatment, and monitoring (Federal Aviation Administration, 2025). Participation in HIMS requires engagement with a HIMS-trained AME and adherence to strict guidelines for initial certification, recertification, and step-down transitions. These may include psychiatric and neuropsychological evaluations, random drug and alcohol testing, and periodic status reports. For cases involving alcohol-related incidents, individuals must report these events on the FAA Form 8500-8 and to the FAA Security Division within 60 days, regardless of how long ago the event occurred. Even administrative actions, such as attending a rehabilitation program, must be disclosed. Importantly, once an airman reports a substance-related event, they must continue to indicate "yes" to the relevant items on the FAA medical application form in all subsequent exams, even if the event was previously resolved or cleared. Failure to comply with reporting requirements or attempting to conceal substance use can result in denial or revocation

of certification, as well as potential criminal liability under federal law. The FAA's policy underscores a zero-tolerance stance on current substance misuse while allowing a tightly controlled and rehabilitative path forward for those in recovery, balancing aviation safety with fairness and medical rehabilitation.

V-3-f) European Union

Screening Procedure

The European Union Aviation Safety Agency (EASA) requires comprehensive mental health evaluations for all applicants undergoing an initial Class 1 aero-medical examination, as outlined in the Easy Access Rules for Aircrew document (European Union Aviation Safety Agency, 2024). This assessment not only aims to identify clinical conditions but also considers social, environmental, and cultural factors that may affect a pilot's mental fitness. Pilots must demonstrate an awareness of mental health, including the ability to recognize symptoms in themselves and others, as well as describe effective coping strategies they have used under stress. The mental health screening under EASA also includes an exploration of the applicant's history of behavioural issues, interpersonal difficulties, and life stressors, including work-related pressure and past childhood behavioural problems. If signs of psychological or psychiatric concerns are identified, the individual must be referred for specialist evaluation by professionals with expertise in aviation psychiatry or psychology. Certain psychiatric conditions result in automatic disqualification unless a thorough evaluation determines otherwise. These conditions include mood disorders, neurotic or personality disorders, substance-related mental or behavioural disorders, and a history of suicide attempts or deliberate self-harm. Applicants diagnosed with schizophrenia, schizotypal, or delusional disorders are considered unfit unless it is clearly demonstrated that the diagnosis was incorrect or that the episode was transient, fully resolved, and unlikely to recur.

Pilots taking psychoactive medication must also undergo fitness evaluations (European Union Aviation Safety Agency, 2024). Medications known to impair alertness or cognitive performance, such as sedatives, stimulants, strong analgesics, or antidepressants, typically lead to disqualification. However, if a pilot is stable on maintenance medication and shows no adverse effects, a fitness assessment with operational limitations may be considered. Psychiatric evaluations must be detailed and include assessments of the applicant's mood, speech, cognition, judgment, insight, and behaviour, as well as signs of agitation, suicidal ideation, or substance misuse. These evaluations may include clinical interviews, biographical reviews, and psychological testing, including aptitude and personality assessments. The decision to grant or deny certification is made by the licensing authority's medical assessor.

EASA (2024) also outlines detailed recommendations regarding medication use for pilots. Pilots are encouraged to self-assess before flying by asking three key questions: "Do I feel fit to fly?", "Do I really need to take medication at all?", and "Have I given this particular medication a personal trial on the ground to ensure that it will not adversely affect my ability to fly?" (European Union Aviation Safety Agency, 2024, p. 1452). Many medications may impair judgment, reaction time, or physical coordination, particularly in the demanding flight environment, where symptoms can worsen due to altitude or stress. Medications such as cough suppressants, sleeping pills, stimulants, and certain anti-malaria drugs like mefloquine are disqualifying due to their effects on cognition, coordination, or mood. EASA emphasizes that even medications considered generally safe can affect individuals differently. Therefore, no new or adjusted medication regimen should be initiated without prior consultation with an

Aero-Medical Examiner or an approved medical assessor. The underlying condition for which the medication is prescribed must also be evaluated, as it may itself pose a risk to flight safety. *Substance Abuse*

In alignment with its mental health policies, EASA mandates drug and alcohol screening as part of the initial Class 1 medical examination (European Union Aviation Safety Agency, 2024). Screening is also permitted during revalidation or renewal, based on risk assessments carried out by national authorities. Substances tested include opioids, cannabis, amphetamines, cocaine, hallucinogens, and sedative-hypnotics. Additional substances may be included depending on national guidelines and the assessed risk profile of the applicant population. If an applicant tests positive, a confirmation test must follow national protocols. Before a fitness decision can be made, the individual must undergo a psychiatric evaluation. Applicants with a diagnosis of mental or behavioural disorders linked to substance use, whether dependent or not, are automatically considered unfit. A fitness assessment may only be considered after at least two years of documented sobriety. In some revalidation cases, earlier assessment may be allowed with operational limitations and strict monitoring, including regular drug and alcohol testing, participation in a treatment program, and ongoing evaluation. EASA guidelines also highlight several indirect behavioural symptoms that may indicate underlying psychological or substance use issues. These include fatigue, appetite or weight changes, low mood, sleep disturbances, emotional instability, and detachment. The medical examiner is expected to thoroughly investigate these symptoms and refer for psychiatric evaluation if needed.

V-3-g) International

Screening Procedure

The International Civil Aviation Organization (ICAO) provides comprehensive guidance on mental health assessment and certification protocols for pilots through its Manual of Civil Aviation Medicine. ICAO outlines that a medical assessment serves as formal evidence that a license holder meets internationally recognized standards of physical and mental fitness (International Civil Aviation Organization, 2012). Pilots are required to self-report any changes in their medical condition that could compromise their ability to operate an aircraft safely. This includes mental health conditions, medication use, or any psychological distress. Mental health assessments are governed by ICAO's stipulations in Annex 1, which specifies that individuals must be free from any psychiatric disorder that could impact flight safety. These include mood disorders, psychotic disorders (such as schizophrenia), anxiety and stress-related conditions, and behavioural syndromes that affect physiological or psychological function. Applicants diagnosed with these conditions are generally deemed unfit unless a thorough case review indicates that the disorder does not pose a safety risk. Pilots with a history of depression who are undergoing treatment with SSRIs are usually assessed as unfit unless the medical assessor determines that their condition is stable, well-managed, and does not interfere with flight duties.

The ICAO manual emphasizes that mental health screening should not only detect disqualifying conditions but also serve as an opportunity for preventive intervention (International Civil Aviation Organization, 2012). To facilitate this, ICAO recommends that medical examiners engage in structured conversations with pilots about behavioural health, lifestyle factors, and substance use. These conversations should involve simple yet targeted questions addressing symptoms of depression, anxiety, alcohol misuse, and drug use.

Importantly, examiners are advised not to record responses unless they reveal a direct risk to flight safety, in order to encourage honest dialogue. Depressive disorders are particularly concerning. ICAO explains that the recurrent nature of depression means that even individuals who appear to have recovered must be monitored closely for signs of relapse, especially within the first two years of remission.

As outlined in the manual, pilots receiving antidepressant treatment are typically assessed as medically unfit unless a detailed review by a licensing medical assessor confirms that the condition is stable and unlikely to interfere with the safe performance of pilot duties (International Civil Aviation Organization, 2012). This shift acknowledges the risks of untreated depression, as well as the potential safety hazards of unreported use of antidepressant medication. Disgualifying depressants include: antihistamines, nitrazepam, diazepam, methaqualone, flurazepam, glutethimides, bromides, methadone, carbamates, ureides, barbiturates, meperidine, morphine and its derivatives, codeine and its derivatives, and opiates. However, the ICAO manual highlights that SSRIs, compared to older antidepressant classes, generally have a more favourable side-effect profile, making them more compatible with aviation duties when used under close supervision. Side effects, if they occur, are usually transient and tend to appear early in treatment. Once stabilized, many patients experience significant symptom relief with minimal interference in cognitive performance. Nevertheless, it is essential to assess not only the effectiveness of treatment but also the presence of residual symptoms or side effects that could affect a pilot's decision-making or reaction time during flight operations.

To accommodate such cases safely, ICAO allows for conditional certification of pilots who are in remission from depression and are stable on approved SSRIs (International Civil Aviation Organization, 2012). These certifications are typically subject to restrictions, such as

limiting the pilot to multi-crew operations to mitigate risk. Several conditions must be met for certification to proceed. The pilot must be under the ongoing care of a qualified healthcare provider experienced in treating mood disorders and must have been on a consistent dose of medication for a minimum of four weeks without unacceptable side effects or adverse drug interactions. Additionally, applicants must show no evidence of suicidal ideation, psychotic features, or significant personality or behavioural issues. The depressive episode must be well-managed, with no signs of psychomotor slowing or unresolved environmental stressors that originally triggered the condition.

ICAO further recommends that cognitive functioning be objectively assessed, particularly in complex cases (International Civil Aviation Organization, 2012). Tools such as neuropsychological evaluations or flight simulator tests may be used to confirm performance capability. The use of assessment scales like the Hamilton Depression Rating Scale is also encouraged. If an individual's medication is being adjusted or tapered off, they are expected to stop flying until stability is confirmed post-adjustment. In addition to depression, other psychiatric conditions such as anxiety disorders, personality disorders, and psychotic illnesses are generally considered incompatible with aviation duties. For example, individuals diagnosed with schizophrenia, delusional disorders, or bipolar disorder are typically permanently disqualified due to the unpredictable and severe nature of these conditions. Personality disorders and impulse control issues also pose risks due to their impact on judgment, interpersonal functioning, and ability to respond appropriately under pressure. To further safeguard aviation safety, ICAO emphasizes that psychoactive substance use must be strictly monitored. Pilots are not permitted to exercise the privileges of their license while under the influence of any psychoactive substance, including prescribed medications, if they impair cognitive or physical

performance. Additionally, habitual use or dependence is explicitly prohibited, and affected individuals may only return to duty after successful treatment and a risk assessment.

Substance Abuse

According to the Manual of Civil Aviation Medicine, the use of non-prescription, mood-altering substances for non-medical purposes is incompatible with aviation safety (International Civil Aviation Organization, 2012). These substances may be used occasionally, but in many cases, usage escalates to dependency. Commonly abused substances include alcohol, cannabis, opioids, stimulants, sedatives, and hallucinogens, with usage patterns varying by region and cultural norms. Substance use disorders are categorized as either dependence or harmful use, based on diagnostic criteria from the ICD-10 and DSM-IV. Dependence is characterized by repeated, uncontrollable use despite negative consequences, increased tolerance, and withdrawal symptoms. Harmful use refers to patterns of use that result in physical, psychological, or social harm. Since these substances impair judgment and cognitive functioning, ICAO strongly advises that they not be used prior to flying, recommending a minimum of 12 hours between use and flight, although longer periods may be necessary depending on the substance and individual.

Substance dependence or abuse is considered disqualifying for medical certification unless there is evidence of recovery, such as documented abstinence, appropriate treatment, and ongoing monitoring (International Civil Aviation Organization, 2012). ICAO emphasizes the need for evaluations by addiction or psychiatric specialists before a pilot may resume safety-sensitive duties. Alcohol dependence is treated as a serious medical and safety concern requiring a structured, multi-phase approach. Due to the high risk of relapse, successful recovery hinges not only on initial treatment but also on sustained monitoring and support. Treatment

typically begins with inpatient hospitalization, especially in cases involving withdrawal symptoms or severe dependency. This stage stabilizes the individual and allows for the safe initiation of therapy. After hospitalization, a comprehensive follow-up plan is essential. This typically includes ongoing psychological care, family involvement, and peer-based support systems, such as those modelled after Alcoholics Anonymous. These group settings help reduce isolation, provide accountability, and create an environment where pilots can share experiences with others in recovery. Since individuals with alcohol dependence often underreport or minimize their drinking, objective measures such as laboratory tests are crucial in confirming abstinence and tracking relapse.

Alcohol abuse, while sometimes viewed as less severe than dependence, is a chronic condition that can easily progress to full dependency if not addressed (International Civil Aviation Organization, 2012). Individuals with alcohol abuse issues often do not seek help voluntarily and usually come to attention only after pressure from family, employers, or legal issues. Accurate diagnosis relies on a combination of suspicion, third-party reports, and medical testing, as patients may not disclose the true extent of their consumption. Given the likelihood of progression to dependence, ICAO recommends that these individuals receive the same level of intervention and support as those already diagnosed with dependence.

In both cases, medical certification should be suspended until the pilot demonstrates sustained recovery (International Civil Aviation Organization, 2012). Historically, this required a three-year period of documented sobriety with regular medical and psychological assessments. However, some regulatory authorities now implement early intervention and rehabilitation models that allow pilots to return to flying duties within three to four months, provided they adhere to a strict, monitored protocol. These modern recovery programs involve a collaborative

approach from peer support, management, medical professionals, and regulatory authorities. The typical timeline for this process includes one month of medical evaluation, one month of inpatient treatment, one month of rehabilitation, followed by ongoing surveillance and testing.

V-4) Central Findings from Analysis

New Zealand

New Zealand's approach to pilot mental health screening is relatively comprehensive, though disorganized. Their Examination Procedure Document outlines general screening criteria, and their substance abuse protocols are robust. However, the mental health framework lacks specificity, with little reference to standardized tools or structured evaluations beyond psychiatric interviews. Neurodevelopmental disorders are not specifically addressed, and relevant guidance is dispersed across various documents, making policy navigation challenging for stakeholders. From a Critical Theory perspective, the absence of clear policy can be seen as a mechanism that reinforces institutional authority while discouraging pilots from questioning or challenging medical decisions. This dynamic further entrenches professional vulnerability. However, New Zealand does acknowledge case-by-case antidepressant certification, indicating an awareness of the complexity of mental health conditions.

United Kingdom

The CAA offers one of the most organized and accessible systems. All information is centralized and clearly presented in detailed documents. Screening procedures include psychosocial and behavioural assessments, with aviation psychiatry specialists evaluating fitness. Notably, the UK explicitly addresses neurodevelopmental disorders, such as ADHD, dyslexia, and ASD, on a case-by-case basis, providing clear criteria and expectations. The presence of objective tools, structured assessments, and defined follow-up requirements signals a mature, safety-conscious system. This jurisdiction exemplifies how standardization and clarity can coexist with individualized assessments.

Australia

The CASA in Australia presents the most comprehensive and balanced system. CASA's medical guidance is structured, detailed, and attentive to the relationship between mental health and operational safety. Psychiatric and substance-related conditions are thoroughly addressed, and Australia offers valuable insights into neurodevelopmental conditions. The inclusion of intellectual disabilities, ASD, dyslexia, and ADHD within CASA's evaluative framework, with requirements for neuropsychological assessment and independent function, sets a gold standard. Additionally, CASA openly addresses stigma and underreporting, promoting a risk-based, individualized certification process supported by scientific assessment tools. From a Critical Theory standpoint, however, one could question whether these individualized assessments, though more compassionate, ultimately serve institutional imperatives—prioritizing workforce efficiency and minimizing liability—over centring pilots' autonomy and dignity.

Canada

Canada presents the weakest and least transparent system among the jurisdictions analyzed. The Canadian Aviation Regulations provide minimal guidance on psychological screening, and publicly available materials, such as the Handbook for Civil Aviation Medical Examiners, offer general and vague directives, leaving much to the discretion of individual medical examiners. Notably, Canada lacks published criteria or procedures for evaluating neurodevelopmental disorders or substance abuse. This lack of standardized information makes it difficult to assess the robustness of the regulatory framework and may inadvertently discourage transparency, hinder proactive mental health management, and limit peer-reviewed accountability. The difficulty in accessing consistent information also reflects a lack of prioritization, which may indicate systemic underinvestment in medical oversight.

United States

The FAA offers more developed policies and guidance compared to Canada. The FAA outlines explicit disqualification criteria, structured processes such as the HIMS and Antidepressant Protocol, and clear procedures for Special Issuance cases. However, despite the volume of documentation, the system is complex and fragmented, spread across regulations, examiner handbooks, and various linked resources. While thorough, this complexity can be overwhelming and difficult to interpret, particularly for laypersons or first-time applicants. Furthermore, although the U.S. offers clear criteria for mood and substance-related conditions, it remains relatively silent on neurodevelopmental disorders, often deferring to special issuances without dedicated screening guidance.

European Union

The EASA provides a highly detailed regulatory document that integrates screening procedures, medication protocols, and disqualification thresholds in a single cohesive framework. However, despite this comprehensiveness, there is a notable absence of dedicated information on neurodevelopmental conditions, which is surprising given the otherwise high standards. Nonetheless, EASA's approach is logical, evidence-informed, and centralized. Screening includes psychosocial history, personality assessments, and situational risk factors, all evaluated by appropriately trained specialists. The clarity and accessibility of the documentation make EASA a strong model for policy transparency.

ICAO

The ICAO Manual of Civil Aviation Medicine is well-organized, prescriptive, and globally relevant. It offers a nuanced understanding of mental illness, medication, and certification, with an emphasis on preventive care and functional risk assessment. However, like EASA and the FAA, ICAO does not meaningfully address neurodevelopmental conditions. By failing to recognize these conditions, ICAO indirectly supports regulatory frameworks that normalize certain cognitive profiles as "fit," while pathologizing others. This dynamic maintains institutional power structures that globally define and discipline pilot fitness. Given ICAO's international influence, this omission may have downstream effects on the regulatory development of member states. Despite this gap, ICAO remains a strong and principled framework for member nations to model policies, particularly in areas such as antidepressant use, substance use disorders, and recovery pathways.

V-5) Results From Case Analysis

Figure 1: Aviation Incidents Involving Mental Health Factors (2000–20

Date	Aircraft Type	Location	Country	Fatalities	Mental Health Factors Mentioned
Jan 15, 2023	ATR72-50 0	Pokhara Gandaki	Nepal	72	Flight crew high workload, stress
Nov 6, 2022	ATR42-50 0	Bukoba Kagera Region	Tanzania	19	Flight crew high workload at the critical phase
Jul 16, 2021	PZL-Miele c AN-28	Kedrovy Tomsk oblast	Russia	0	Flight crew operational fatigue, hypoxia stress

Aug 13, 2020	Let L-410	Mt Kahuzi Sud-Kivu	Democratic Republic of Congo	4	Crew members' excessive workload
Mar 4, 2019	Embraer ERJ-145	Presque Isle Maine	United States of America	0	First officer fatigue
Sep 1, 2018	Boeing 737-800	Sochi-Adler Krasnodar Krai	Russia	0	Crew members' psychoemotional stress
Mar 12, 2018	DHC-8-40 0	Kathmandu-Tribhuv an	Nepal	51	Pilot in command stress, lack of sleep, history of depression, smoking on plane, aggressive behaviour
Feb 11, 2018	Antonov AN-148	Stepanovskoye Moscow oblast	Russia	71	Captain's psychological incapacitation, fatigue
Aug 3, 2016	Boeing 777-300	Dubai	United Arab Emirates	0	Flight crew situational stress, increased workload
Mar 19, 2016	Boeing 737-800	Rostov-on-Don	Russia	62	Pilot in command psychological incapacitation, fatigue
Nov 22, 2015	Boeing 737-300	Osh City	Kyrgyzstan	0	Flight crew fatigue due to extended duty
Mar 24, 2015	Airbus A320	Prads-Haute-Bléone	France	150	Copilot suicide, mental disorder

Mar 5, 2015	MD-88	New York-LaGuardia	United States of America	0	Captin situational stress, high workload
Nov 29, 2013	Embraer ERJ-190	Divundu Kavango Region	Namibia	33	Pilot suicide, personal distress
Nov 17, 2013	Boeing 737-500	Kazan	Russia	50	Flight crew emotional stress, fatigue
Jul 6, 2013	Boeing 777-200	San Francisco	United States of America	3	Flight crew fatigue
Jan 29, 2013	CRJ-200	Almaty	Kazakhstan	21	Crew members' emotional stress, Pilot in command's post-surgery fatigue
Dec 22, 2012	SA227 Metro III	Sanikiluaq	Canada	1	Flight crew frustration, stress, fatigue
Sep 12, 2012	PZL-Miele c AN-28	Palana Kamchatka Krai	Russia	10	Alcohol use by crew members
Apr 2, 2012	ATR72-20 0	Tyumen	Russia	33	Crew members fatigue
Sep 23, 2011	DHC-3 Otter	Kodiak	United States of America	1	Pilot use of sedative medication
Jun 20, 2011	Tupolev TU-134	Petrozavodsk	Russia	47	Commanders alcohol intoxication

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Feb 10, 2011	SA227 Metro III	Cork	Ireland	6	Crew members fatigue
May 22, 2010	Boeing 737-800	Mangalore	India	158	Captins sleep inertia, circadian low
Jan 25, 2010	Boeing 737-800	Beirut	Lebanon	90	Captains chronic fatigue
Dec 19, 2008	Britten-N orman Islander	Espiritu Santo All Vanuatu	Vanuatu	1	Pilot less communicative before and after flight
Sep 14, 2008	Boeing 737-500	Perm	Russia	88	Captain's fatigue, alcohol use
Sep 16, 2007	MD-82	Phuket	Thailand	90	Flight crew stress, fatigue
Jul 17, 2007	Airbus A320	São Paulo	Brazil	199	Pilot in command anxiety, stress
Feb 6, 2007	Beechcraf t 200	East Bay Cay	Turks and Caicos	1	Pilot alcohol use
Oct 19, 2004	BAe Jetstrea m 31	Kirksville	United States of America	13	Pilots' Fatigue
Dec 13, 2003	Boeing 737-200	Lima	Peru	0	Crew fatigue due to flight schedule

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Jan 26, 2003	Boeing 737-200	Rio Branco	Brazil	0	Crew pressure, stress
Jan 9, 2003	Fokker F28	Chachapoyas	Peru	46	Copilot stress, depression
Nov 24, 2001	Avro RJ100	Zurich	Switzerland	24	Commanders fatigue

V-6) Central Findings from Analysis

Fatigue

Fatigue was a contributing factor in at least 18 of the 35 cases, making it the most frequently cited mental health-related factor. It manifested in various forms, including chronic fatigue, sleep inertia, circadian rhythm disruption, and post-surgical exhaustion. The prevalence of fatigue across so many incidents, often in fatal crashes, underscores the urgent need for tighter regulation and monitoring of pilot duty hours, rest cycles, and mental fitness evaluations.

Stress and Emotional Instability

More than 22 incidents explicitly referenced psychological stress, emotional pressure, or psychiatric destabilization. These ranged from general workload stress, as seen in Bukoba (2022) and Pokhara (2023), to cases involving pilots exhibiting aggressive behaviour or depression, such as Kathmandu (2018). Stress-related mental impairment remains under-recognized and under-regulated across many jurisdictions, despite its clear impact on flight safety.

Suicide and Deliberate Harm

Three major incidents were determined or strongly suspected to involve pilot suicide: Germanwings (France, 2015), Namibia (2013), and Peru (2003). Together, these crashes resulted
in 229 fatalities, starkly highlighting the catastrophic consequences that undiagnosed or concealed mental health conditions can have in aviation.

Substance Use and Medication

At least five cases involved direct substance use by flight crew, including alcohol consumption (Russia 2012, Russia 2008, Ireland 2011), sedative medication (USA 2011), and intoxication-related incapacitation (Russia 2011). These incidents point to ongoing gaps in substance use regulation, detection, and reporting protocols.

V-7) Chapter Summary

This chapter has revealed the complex and often inconsistent landscape of pilot mental health regulation across international jurisdictions. Through comparative content analysis of regulatory frameworks and aviation incident reports, key themes such as fatigue, stress, suicide, stigma, and regulatory rigidity emerged as central issues impacting pilot well-being and flight safety. While some jurisdictions offer transparent and individualized approaches, others suffer from policy fragmentation or a lack of clarity, particularly in areas such as neurodevelopmental disorders and substance use. Overall, the findings highlight the need for a more balanced, humane, and standardized approach to mental health in aviation. The following chapter will examine how these results address the central research question, evaluate their connection to existing academic and regulatory scholarship, and explore broader implications, limitations, and directions for future research and policy development.

CHAPTER VI: DISCUSSION AND CONCLUSION

VI-1) Chapter Overview

This chapter interprets the research findings by addressing the core research question and linking the results to existing scholarship. It highlights key similarities and differences across jurisdictions, demonstrating how most regulatory frameworks remain rigid and risk-averse despite growing awareness of mental health in aviation. The chapter also acknowledges methodological limitations while reaffirming the appropriateness of the chosen qualitative, document-based approach. It concludes by discussing the broader implications of the findings and proposing future research into airline-specific policies and cultural influences on mental health governance.

VI-2) Addressing the Research Question

The research findings directly answer the central question by revealing both similarities and differences in how commercial pilots' mental health is regulated across the selected jurisdictions. All jurisdictions examined have psychological screening and disqualification criteria; however, the depth, clarity, and inclusiveness of these frameworks vary widely. Australia and the United Kingdom offer detailed, structured guidance that includes neurodevelopmental conditions, whereas Canada lacks transparency and provides minimal publicly available information. From a Critical Theory perspective, this lack of transparency reflects how regulatory systems can maintain unequal access to power, privileging aviation authorities while limiting pilots' ability to advocate for themselves.

The findings extend beyond the initial inquiry by illustrating that, despite the growing recognition of mental health in aviation, most policies remain rigid, risk-averse, and slow to evolve, often favouring exclusion over rehabilitation or proactive care. This inflexibility supports

Critical Theory's assertion that institutions prioritize control and risk management over individual well-being, thereby reinforcing systemic inequalities under the guise of public safety. These findings highlight the need for more adaptive and supportive regulatory frameworks that balance safety with mental health advocacy.

VI-3) Relation to Existing Research and Scholarship

The findings of this study align closely with existing literature emphasizing the significance of mental health issues such as depression, anxiety, and stigma in aviation. Research by Cahill et al. (2020) and Cross et al. (2024) demonstrates that pilots often avoid seeking help due to stigma and fear of professional consequences, patterns mirrored by this study's findings through regulatory inconsistencies and rigid disqualification systems. A Critical Theory lens reveals how this fear is not incidental but structurally produced by regulatory frameworks that discipline pilots' behaviour through surveillance and the threat of exclusion.

The regulatory analysis showed that several jurisdictions, especially Australia, the United Kingdom, and the European Union, have structured guidance and case-by-case pathways, particularly regarding depression and antidepressant use. This somewhat contradicts claims by Hoffman et al. (2022) and Wu et al. (2016) that confidentiality concerns and fear dominate the regulatory landscape across all regions. However, the lack of or vagueness of protocols for neurodevelopmental disorders such as ADHD, as identified by Kelley (2024) and Laukkala et al. (2017), aligns closely with this research's findings.

While prior literature often frames the issue as one of underregulation or lack of recognition, this study suggests that many jurisdictions do possess comprehensive mental health frameworks; however, they are characterized by rigidity and a lack of rehabilitative focus. From

a Critical Theory perspective, this rigidity serves to protect institutional authority and manage liability rather than to promote pilot well-being, thus perpetuating systemic inequities.

This study differs from certain interpretations in the literature that advocate merely for wider screening implementation. Instead, it emphasizes that the quality, transparency, and flexibility of regulatory frameworks are more important than their quantity. This research suggests that the problem extends beyond regulatory gaps to a broader systemic failure to adapt to pilots' mental health needs with empathy and progressive reform.

VI-4) Limitations and Other Considerations

As discussed in earlier chapters, the qualitative approach and reliance on document analysis limited the ability to observe firsthand experiences or assess unpublished regulatory developments. The study depends on publicly available documents and archival reports, and does not include internal or confidential aviation authority policies, particularly in jurisdictions with limited transparency, such as Canada. While the comparative analysis offered broad insights, it may not fully capture specific cultural elements or institutional nuances within each country's aviation and mental health systems. These limitations were mitigated by drawing from multiple sources, including international regulations and aviation incident reports, and by conducting content analysis to identify patterns and inconsistencies. Despite these limitations, the qualitative, document-based approach was well-suited for examining regulatory language and policy structures, enabling detailed cross-national comparisons. It was also a cost-effective and practical method given the time and resource constraints of the project, ultimately generating meaningful insights into international aviation mental health frameworks.

VI-5) Implications and Suggested Future Research

This study contributes to the field of aviation mental health by expanding the focus from individual psychological challenges to the regulatory frameworks governing pilot mental health. While previous research emphasized stigma, depression, and pilots' reluctance to seek help, this thesis introduces a policy-level analysis, revealing how aviation authorities often fail to evolve frameworks that support individualized care or recognize neurodevelopmental conditions. Using a Critical Theory lens, the findings challenge dominant narratives that equate regulatory control with public safety, instead advocating for policies centred on human dignity, equity, and care. The research shows that regulatory practices require greater flexibility and a human-centred focus. Future research should explore airline-specific mental health programs, internal policies, and the operational cultures of individual carriers to gain deeper insights. Additionally, studying the influence of national cultural attitudes toward mental health on policy implementation would further enrich understanding. Applying Critical Theory in future research would continue to expose how intersecting power structures shape access to mental health resources within the aviation sector.

VI-6) Final Thoughts

This study demonstrates that while aviation mental health regulations have evolved, they remain largely rigid and exclusionary, often prioritizing institutional control over individualized care. Through the lens of Critical Theory, it becomes clear that regulatory frameworks—even when well-intentioned—reinforce hierarchies of power by normalizing surveillance, limiting transparency, and deterring pilots from seeking help. True flight safety and pilot well-being are not conflicting goals. Achieving both requires regulatory frameworks that move beyond punitive approaches and instead embrace systems grounded in dignity, trust, and adaptability.

Reimagining aviation mental health regulation involves challenging the status quo and building policies that recognize pilots not merely as risks to be managed but as individuals whose complex realities deserve acknowledgment, support, and equity.

VI-7) Chapter Summary

This chapter concludes the thesis by revisiting the original research question and demonstrating how the study successfully addressed its aim of evaluating and comparing mental health regulations for commercial pilots across key aviation jurisdictions. The study showed that while regulatory frameworks exist universally, their clarity, flexibility, and inclusivity vary significantly. Each chapter contributed to this conclusion: the literature review revealed stigma and gaps in support; the theoretical framework provided tools for interrogating institutional power and exclusion; the methodology enabled a cross-jurisdictional comparison; and the data analysis identified patterns of rigidity and underrepresentation, particularly in Canada and the United States. Overall, this thesis offers a critical, comparative, and policy-focused contribution to the literature on aviation mental health and opens avenues for future research into airline-specific practices and cultural influences on regulation.

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