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Pegasus Aviation Advisors FZ LLC (Pegasus) is a boutique strategic aviation management advisory group that provides high-level policy and business transformation support to organizations across the globe. Key members of its team have had many years of experience working on airports, airlines and airspace issues within Australia. Over the past 5 years a significant focus of our team has been devoted to identifying the "Future of Aviation" and dealing with systemic efficiencies that would result in mitigation of environmental impacts and improve travel.

The Pegasus team has over 40 years-experience in working on assignments ranging from leadership of the Master Planning team for Western Sydney Airport, through aviation sector re-organization in Papua New Guinea to strategic planning for major greenfield airports in Istanbul and Warsaw.

Pegasus believes that the current crisis has exposed serious flaws in aviation strategies, policies and regulatory models and, at the same time, it has focused attention on the need to take best advantage of technology. The Department's initiative to develop a Five-Year Plan is a timely opportunity to take stock of these flaws and of the opportunities to make strategic choices in Australia's best interests.

Our experienced team elaborates on these themes in this submission and we suggest three specific areas where we believe a redefined national strategic plan could provide necessary conditions for a sustainable recovery of the aviation sector, namely:

- Airspace Redesign;
- Declaration of capacity by air navigation services, airlines and airports; and
- Providing leadership for digital transformation by airlines and airports.

Introduction

Highly respected leaders in the aviation sector have gone on record acknowledging that the impacts of the Covid-19 induced crisis will have long-lasting impacts on markets and on the way that business is conducted. Pegasus concurs with this view, but also considers that the crisis exposed serious flaws in aviation strategies, policies and regulatory models.

Numerous studies have documented aviation's contribution to the economy, as an enabler for other sectors, notably tourism. The crisis, by severely curtailing aviation services, brought these studies into sharp focus as aviation was called upon to perform humanitarian tasks and to transport urgently needed medical supplies. The interruption in supply chains and the absence of international visitors place the aforementioned studies in perspective. **Aviation is of vital strategic importance in today's connected world and is deserving of attention at the highest levels of government.**

The Covid-19 pandemic has occurred against the background of a number of key societal trends that, when taken in combination, place aviation at a crossroad, including:

- The failure of core elements in the aviation value chain, airlines, airports, air navigation services providers, and manufacturers to deliver adequate returns on invested funds.
- A loss of confidence in regulatory systems as exemplified with the prolonged grounding of B737MAX.
- Increased public concern about climate change.
- Trade wars between key trading States or blocs.
- Accelerated growth of e-commerce allied to collapse of traditional shopping.
- Accelerated rate of change in technology.

These evolving conditions influence how society reacts, how people's dreams are brought to reality, and fundamentally question how society is to survive in the future. As society reflects upon Covid-19 it is believed that key graphic messages will impact government thinking:

- China's carbon emissions fell by around 25% over a four-week period during the lock-down while residents in Delhi could see the Himalayas for the first time in a decade.
- Society working successfully from home and not wasting valuable time in commuting.
- The adverse and disproportionate impact on the disadvantaged in the world.
- Acceleration in technical knowledge and its support to society.
- The renewed reliance by governments on science and technology.
- Destruction of wealth and increased burden of debt
- A shift in consumer behavior with greater weight given to avoidance of risks and on health.
- Increased demands to deliver biosecurity and to support national health systems.

The overarching issue for aviation will be how Governments can balance the economic impacts of the sector with other impinging factors, both positive and negative. Where fault lines exist, they need to be identified and be mitigated in a sustainable way. The COVID-19 pandemic has revealed that we are more interconnected than ever before, and that this connectivity is highly complex and central to our lives and our economies. Yet the key strategic decisions in aviation are made in a disjointed way when compared to other sectors where there are leaders with significant market share, who are organizing production and delivery, setting standards, and investing in innovation to operate and build efficiently.

The Covid-19 crisis should be a call to arms for both the airport and airline communities to start meaningful collaborative initiatives with the digital technology sector to learn from other industries and accelerate innovation.

Within the context of this submission we wish to concentrate on three specific matters that would all, if implemented, result in reductions in environmental impact due to greater efficiency;

1. Airspace - Redesign

The Issues Paper emphasized a reduction in the cost of regulatory compliance by improving air navigation policy and investments, notably

- OneSKY to provide a new, harmonized civil-military air traffic management system, which will give Australia new levels of operational efficiency, cost efficiency and safety. It will also reduce delays for the travelling public and provide opportunities to improve environmental outcomes; and
- The Australian Airspace Policy Statement (AAPS) sets direction for CASA in administering airspace and is a critical element in setting the Government's policy direction in airspace administration. It is updated every three years, and the new version will be published in 2021 following public consultation.

An undertaking was made to consult with industry in 2020 on a range of options to develop a National Strategic Airspace Policy to ensure Australia's airspace administration and management arrangements remain appropriate into the future. Airspace is a crucial part of the air transport system where the Air Navigations Service Providers (ANSPs) managing the airspace architecture (Airservices, in Australia) have seen catastrophic falls in service revenue during Covid 19. This provides the opportunity to consider how it may be improved.

The design of Australia's air routes was largely undertaken in the 1950's when aircraft, navigation and safety management was in its infancy. Although there have been major advances in technology, navigation and airspace management systems the fundamental route networks in Australia have remained the same. Based on the evidence that we have identified there is a need to redesign the Australian airways network, as a fundamental investment platform of a National Strategic Airspace Policy. The overall impact of the design changes **would be reductions in aircraft fuel consumption**, and it would also provide the opportunity to minimize or distribute aircraft noise impact across the community.

2. Airspace, airlines and airports – Capacity Declaration

In order to address **carbon reduction and less noise disturbance caused by aviation**, there are real opportunities for systemic improvements to be achieved through more focused collaboration between national stakeholders – airlines, airports and the airspace managers. While aviation and technical policies have an inherently international nature, the **scope for benefit from national initiatives** is in our view, promising in the near to medium term.

This can be achieved to a large extent by addressing the highly intensive use of critical resources including; runways, airspace, and aircraft. Intensive utilization has led to increased

airspace and on-the-ground congestion, and has contributed to significant flight disruption, degraded environmental performance, cost inefficiencies and passenger complaints about delays.

In our view a better balance of real capacity, reflecting a sensible margin for system resilience, with overall demand is needed. This will require compromise. Whether by airports wishing to make the maximum use of scarce runway resource, airlines scheduling unachievable turnaround times to maximize aircraft utilization, or ANSP's accepting an ever-increasing demand on an airspace system that is (was) already over-stretched.

The review will need to take into account that, for airports, the primary asset and value driver is usually its runway(s). In general terms, the more aircraft movements it can process on its runways, the greater the revenue it is able to achieve. Similarly, an airline's primary asset and value driver is its aircraft fleet as airframe utilization and load factors have a direct bearing on the revenue an airline can achieve. When developing policy, we believe the government could impose improved resilience in airport capacity declarations. As a result, when traffic recovers, delays could be structurally reduced and the environmental performance for subject airports should be significantly improved.

Achieving the desired outcomes will require compromise. Whether by airports wishing to make the maximum use of scarce runway resource, airlines scheduling unrealistic turnaround times to maximize aircraft utilization, or ANSPs accepting an ever-increasing demand on an airspace system that is (was) already over-stretched at times. The Australian Government and stakeholders should consider:

- Introduction of policies and technology tools, to reduce aircraft congestion on the ground and in the air.
- Incentivizing reduced used of congested airspace, through distribution of traffic more evenly to make better use of underutilized runways and airspace.
- Accelerating planned airspace modernization to release the efficiency capabilities.
- Develop and implement system KPIs' that record both extended aircraft arrival routings and departure delays.
- Cross industry leadership and accountability for improvements to environmental performance, monitoring and reporting.

3. Airports and Airlines – Digital Transformation

Under the heading "**Reducing the Regulatory Burden: Facilitating new and emerging technologies**" it appears that the Government is "developing a national whole-of-government framework to manage new aviation technologies, such as drones and eVTOL vehicles. The output will be a National Emerging Aviation Technologies Policy – the rationale being to "*provide certainty for industry investment and provide a clear policy and legal framework that encourages and facilitates the use of this technology*".

The COVID-19 crisis has shown that the airport sector is not sufficiently resilient to cope with major shocks, with sizeable fixed costs, limited operational flexibility, vulnerable passenger markets and with airlines being placed in a precarious financial position.

We are in the early stages of the digital age that has already upended commercial retail, and the taxi and hotel industries (i.e. Amazon, Uber and AirBnB). Like all industries in the global digital economy, the aviation sector will need to be an active participant and proactively engage and embrace this change. The aviation sector now has an opportunity to move away from these legacy providers since it will be companies outside of the industry that drive this digital transformation.

Now is the time to reinvigorate efforts towards a true, end-to-end, seamless travel experience on a multi-airport basis. Digital technology solutions already present the opportunity for consistent, touchless passenger terminal processes which can mitigate travel fears. The necessary terminal interfaces such as check-in, bag drop, security, passenger boarding and baggage collection as well as the transport mode selections to and from airports, could be fully integrated and optimized.

This will require collaboration between technology providers, government agencies and the air transport industry, with data sharing to provide real-time digital solutions. This integration can be achieved by looking at the travel process holistically and from a traveler's perspective. The industry needs to set aside the 20th Century passenger terminal model with its inherent limitations and consider facilities development from a customer-centric perspective to reinvent the processes using available technological tools.

Fundamentally, the traveler is seeking a smooth, seamless and predictable transition from their home or office to an airplane and from that airplane to their destination. There is already a drive towards the seamless travel experience, but the offerings remain disjointed, with little integration of the various products offered. The Big Data ecosystem involves trusted cloud-based digital platforms that potentially allow for collaboration toward shared goals. To work, data must be available and shared across all stakeholders. The ability to access, mine and analyze data from the multiple sources, will redefine the airport operational and business processes, as well as create opportunities to delight the passenger. A global trusted platform using digital identity facial recognition would encourage enough efficiencies to largely make the current IATA Airport Design Reference Manual (ADRM) guidelines obsolete.

We trust these observations will be of value to the Department in addressing the questions posed in its Issues Paper.

Yours faithfully,

My best regards,

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Michael Kellaway
Chairman

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Pegasus Aviation Advisors FZ LLC,

Contributors:

Michael Kellaway, Chairman, has over 35 years-experience in the provision of senior level advice to Governments, International Funding Institutions (IFI's), airports, airlines and aviation support companies in 35 countries. He has global experience in leading multi-disciplinary professional teams, mentoring and formulating and directing pragmatic outcomes. Michael has advised a number of Governments, airlines, airports and businesses around the world on policy, regulation, business and infrastructure development.

Jim Robinson, Managing Director, has extensive experience in the planning and development of aviation infrastructure projects. Trained as an architect, the majority of his experience has been in international airport development encompassing strategic planning, airport master planning, capital program development and investment risk analysis. He leads NexTerm, an innovation research think tank focused on the use of advanced technology to improve airport efficiency and passenger experience. He has practical experience working at senior management level serving as Head of Strategic Planning at Dubai International Airport as well as Head of Planning at Abu Dhabi International Airport.

Dr. Paul Hooper, Senior Advisor, has extensive international experience in the preparation and analysis of feasibility studies and business plans, the formulation of policy and strategy, design and implementation of economic regulations, pricing and financing of infrastructure and services, economic development, and institutional strengthening. His career spans four decades in ICAO, the public sector, consulting, and leading universities and he has extensive experience in the Middle East and Asia. Paul's most recent consulting engagements include institutional strengthening and preparation of a national aviation policy (Timor-Leste), and assessing the feasibility of a regional aviation safety oversight organisation in South Asia. Paul's publications on productivity measurement, privatization, competition and regulation are well known.

Graham Lake, Senior Advisor, has more than 35 years senior experience in aviation services including air traffic control. He served as Director General of CANSO, the global trade association for Air Navigation Providers. He has also served on a number of industry and commercial boards including as Chairman of MicroNav an ATC Simulation provider, a Board member of ATAG, the air transport industry's environmental policy group; as President of Aero-Mobile an aircraft communications provider, and board member of OnAir an Airbus/SITA company. He has spent more than 25 years in international aviation policy advocacy and business management including ten years as a senior executive of ARINC a US based aviation services company.