Sir Reginald Ansett Memorial Lecture Remarks
by the Secretary General
of the International Civil Aviation Organization (ICAO),
Dr. Fang Liu,
to the Safeskies 2019 Conference

(Canberra, Australia – 15 October 2019)

1. I would like to begin by extending my thanks to Captain Peter Raven of Safeskies for the kind invitation to join you today.

2. It's truly an honour to have been invited to deliver the "Sir Reginald Ansett Memorial Lecture" at this year's event here in lovely Canberra.

3. My objective today will be to provide you with a brief overview of ICAO's mission and role in civil aviation, to provide an overview of the importance of air connectivity to the socio-economic development of civil societies, and to review some key aviation safety updates, including those emerging from our recently-concluded 40th ICAO Assembly.

4. Since ICAO was created under the Convention on International Civil Aviation, or 'Chicago Convention', in 1944, its main objective has been to develop and amend international civil aviation Standards and Recommended Practices, or 'SARPs', to harmonize the safe, secure, efficient and sustainable development of the international air transport network.

5. Today, 75 years later, there are more than 12,000 of these SARPs contained in the 19 Annexes to the Convention on International Civil Aviation (Chicago Convention), and all ICAO Member States must comply with or exceed them through their civil aviation rules and regulations.

6. These ICAO provisions govern all areas of air transport, including not only our core work in support of improved safety performance, but also aviation security, air navigation routes and procedures, personnel licensing, airport development, aircraft airworthiness, accident investigation, and many other priorities.

7. Recognizing the importance of ICAO's role, in 1999 we responded to calls from Member States to launch the Universal Safety Oversight Audit Programme (USOAP).

8. This audits the eight Critical Elements required for effective implementation of a State aviation safety oversight capability.

9. Since the USOAP was launched, 191 Member States have been audited by ICAO, and some more than once under its Continuous Monitoring Approach.

10. USOAP monitoring and reporting mechanisms have also become invaluable to our efforts to identify local and regional challenges, and so to provide needed assistance and capacity-building where States need it most.

11. In more recent years this data has been supplemented by what we record in our annual Safety and Air Navigation reports.

12. In 2002, the Universal Security Audit Programme (USAP) was also approved by the ICAO Assembly. It has also evolved to a Continuous Monitoring Approach, and is seen as more important than ever today given the very dynamic and challenging air transport threat and risk context.

13. Both of these audit programmes are the best tools at our disposal for obtaining continuous data and analysis on Member States' aviation performance, including their level of effective implementation of SARPS, guidance material, associated procedures and related practices.

14. Building on these core responsibilities, ICAO is now fully engaged, with our colleagues throughout the UN system in working towards the historic *Agenda 2030* which governments have adopted along with its 17 visionary Sustainable Development Goals, or 'SDGs'.

15. Since the global Summit in 2015 which adopted the SDGs, ICAO has been working very hard to improve global awareness on how the availability of safe, secure, efficient, economically viable, and environmentally sustainable air transport operations is fundamental to States' wider SDG objectives.

16. On our public website, for example, we have an extensive table illustrating how international air connectivity aids States' realization of no fewer than 15 of the 17 SDGs under the UN Agenda 2030 now being pursued by countries globally.

17. This promise of civil aviation has been clearly acknowledged since our Chicago Convention was first established, and what its drafters clearly recognized was that international air transport held tremendous potential for the fostering of global peace and understanding.

18. This is accomplished not only through the vibrant international exchange of cultures and ideas it permits through our air travel, but also the many other ways by which air connectivity supports social and economic development wherever aircraft fly.

19. As we witness current developments, such as new eCommerce capabilities shaping the expectations of modern consumers for next day or even same-day deliveries, I think it's safe to say that aviation's role in increasing trade and socio-economic development around the world will only become more relevant in the years ahead.

20. This assertion is backed up by the fact that aviation today supports over 63.5 million jobs around the world, while generating almost 3 trillion dollars in global GDP.

21. Here in the Asia Pacific, meanwhile, your region is characterized by the highest rate of traffic growth globally, at 10 per cent annually.

22. In addition, the combined market share of Asia Pacific carriers today accounts for some 33 per cent of global passenger traffic and 39 per cent of global freight traffic.

23. Your overall air transport industry supports 31 million jobs and 632 billion dollars in Gross Domestic Product (GDP), and impressively some 35 per cent of today's global airport investments are concentrated here in Asia, supporting over 540 infrastructure projects worth almost 200 billion dollars.

24. I would also like to highlight here that aircraft also carry over half of the 1.1 billion tourists who travel across international borders each year – a figure which rises to over 80 per cent for the small island states who are so deeply reliant on tourism and air connectivity for their local prosperity.

25. ICAO realizes that the Asia-Pacific region is comprised of many such States, and I would like to take a moment to acknowledge here how Australia and other APAC States so regularly draw our attention to the unique challenges which Small Island Developing States face today, and the key role of international air connectivity in helping to address them.

26. ICAO works tirelessly to ensure that countries and the public are aware of these impacts, with the goal of ensuring that States' national development plans factor in appropriate priorities and funding for aviation infrastructure and other needs.

27. It was in recognition and support of this challenge that we undertook two important initiatives in 2015: our *No Country left Behind* or 'NCLB' initiative; and our new ICAO World Aviation Forums.

28. Our efforts under *'No Country Left Behind'* recognize that the effective implementation by States of ICAO's Standards and Polices is just as fundamental to their ability to participate in, and benefit from, aviation's remarkable global network.

29. 'No Country Left Behind' is therefore focused on providing or coordinating assistance and capacity-building for States, both developed and developing, and ensuring they have the skills and resources needed to be fully ICAO-compliant.

30. Taken together, ICAO's NCLB activities have produced clear results in terms of enhanced Member State compliance with our norms, improved national capabilities for aviation safety and security oversight, and increased global interoperability.

31. Many States which previously recorded lower levels of effective implementation of ICAO Safety SARPs, for example, have now attained or surpassed the 60 per cent minimum target in ICAO's Global Aviation Safety Plan.

32. There has also been a dramatic decrease in the number of States recording Significant Safety Concerns in their Safety audits, and the global average of Effective implementation of safety SARPs has increased a full 9 per cent worldwide since the advent of NCLB.

33. Accident totals too have been continuously decreasing, with some regions having even achieved zero fatalities in scheduled services over multi-year periods.

34. In addition to these sectoral performance improvements, ICAO's World Aviation Forum events have also been instrumental in helping States to better integrate their aviation and national development strategies.

35. This has been accomplished by helping them to develop better business cases and more attractive investment climates relevant to their major aviation infrastructure and project needs, as well as through formal networking opportunities designed to put governments in touch with the financing and investment partners needed today to make those megaprojects a reality.

36. ICAO's modern mission and role are more important now than ever before, and mainly in light of the doubling of flight and passenger volumes now forecast to take place by the mid-2030s.

37. This doubling means, in the simplest of terms, that the daily 10 million passengers and 100,000 flights now managed by our network will surpass 20 million passengers, on twice as many flights, in just the next 15 years.

38. This points to the need for a new generation of skilled aviation professionals to operate and manage the air transport system of the future, and many more in fact that we are prepared to develop and train today.

39. But as with all challenges this one also carries with it a new opportunity, and that's to train more young girls and women to fill the many vacant positions now forecast, thus helping to address the unfortunate and persisting gender gap in aviation.

40. As a woman who has spent her entire career in air transport, this cause is an especially personal one for me and I was extremely gratified in 2016 when the global aviation gender issue was prioritized through an Assembly Resolution endorsement by our Member States.

41. This highlights in part that as ICAO continues to plan toward and manage forecast growth, we have not lost sight of the fact that in the *Agenda 2030* era we must seek to identify opportunities which are consistent with the social, economic, and environmental pillars of sustainable development.

42. Importantly, effective planning and action for sustainable growth must consistently acknowledge all three of these pillars together. None can be pursued at the expense of the others.

43. As we keep this under consideration, however, we must also be very much aware that aviation today is on the brink of some major transformations.

44. This is reflected in the increasing deployment of drone technologies, the launch of new autonomous and suborbital operations, as well as the increasing deployment of artificial intelligence and blockchain technologies in air transport.

45. Throughout our global aviation network, and our ICAO Member States, these developments point to a tremendous modernization taking place over the years ahead.

46. Accordingly, ICAO's goal is to define a collective vision of a safe, interoperable, seamless and global civil air traffic management system for the 21st century.

47. As some of you will recall, the air navigation system modernization process began with the Tenth Air Navigation Conference, in 1991.

48. At that time, our sector agreed to evolve itself from a ground-based to a largely satellite-based air navigation system.

49. Subsequently, at the Eleventh Air Navigation Conference in 2003, we endorsed a global air traffic management operational concept and developed a related work programme.

50. The Twelfth Air Navigation Conference, in 2012, then introduced the Aviation System Block Upgrades or 'ASBU' framework.

51. The 13th Air Navigation Conference, which ICAO convened last October, was importantly preceded by the Second Global Air Navigation Industry Symposium (GANIS), and the first-ever ICAO Safety and Air Navigation Implementation Symposium (SANIS) a year earlier.

52. The point of these GANIS and SANIS events was to gather advance industry viewpoints on the evolution of the global air navigation system, and to develop insights into any new or existing implementation challenges respective of ICAO's proposed updates to our Global Air Navigation Plan (GANP), and Global Aviation Safety Plan (GASP).

53. The 13th Air Navigation Conference therefore helped us to pave the way for the Assembly's endorsement this year of the revised GASP and GANP, and it evaluated new proposals to define and address the challenges that engage every stakeholder in the aviation industry, notably through the creation of a new 'digital trust framework' for global aviation.

54. This framework has been designed to build upon your existing certification and licensing oversight commitments, enshrined in the Chicago Convention, and to enable the interoperable evolution of these new and connected systems.

55. Through the ASBUs and the consensus-based targets and objectives set-out in the GANP and GASP, ICAO has provided the tools you need to accelerate this transition, and to realize the performance capabilities which will keep our sector vital, efficient, and fully responsive to the needs and expectations of modern businesses and societies.

56. At the Regional level, this will be supported by the Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs), which help to guarantee the alignment of procedures and interoperability of systems.

57. And a great deal of this progress can also be achieved through the better management and use of the sectoral performance data.

58. Fortunately, our over-arching concepts in terms of System Wide Information Management (SWIM) and Collaborative Decision Making (CDM) are now helping to guide this process.

59. While NCLB, as I mentioned earlier, is achieving important sector-wide improvements on oversight capacities and other metrics, many States still continue to struggle with SARPs compliance due to shortfalls in their resources and technical capacities.

60. To address this, ICAO has been promoting regional mechanisms, including the establishment of collaborative Regional Safety Oversight Organizations (RSOOs).

61. However, many of the established RSOOs are yet to be as effective as they should in strengthening the safety oversight capabilities of their component countries.

62. There are many factors and challenges including varying degrees of delegated responsibility, and a lack of expertise and resources, that are preventing the RSOOs from attaining their full potentials.

63. These persisting concerns were discussed at length at the RSOO Forum which ICAO and EASA convened together in Swaziland, in 2017.

64. It eventually endorsed that ICAO should pursue a new Global Aviation Safety Oversight System or GASOS, focused on streamlining ICAO's engagement and support to RSOOs to enable them effectively discharge their mandates to their constituent States, and this overall GASOS proposal was endorsed officially this year at the 40th Assembly.

65. The Assembly also endorsed important new revisions to ICAO's Global Plans for Aviation Safety and Air Navigation Capacity and Efficiency, the GASP and the GANP, which will be instrumental to managing the adoption and integration of new 21st Century aircraft and operations alongside traditional aircraft operations.

66. The GASP sets forth ICAO's safety strategy to continuously improve aviation safety. Its vision is to achieve and maintain the aspirational safety goal of zero fatalities in commercial operations by 2030 and beyond.

67. The GASP also promotes the implementation of safety management and a risk-based approach to help manage increasingly complex aviation systems, including through a series of six goals.

68. Some of these address organizational challenges, also referred to as "systemic issues", which may contribute to accidents or incidents. These goals primarily call for States to implement or improve effective safety oversight systems.

69. Other goals address the management of operational safety risks through effective implementation of State Safety Programmes (SSPs) and the need for appropriate infrastructure available to support safe operations. This infrastructure is further delineated in the Global Air Navigation Plan's 'Basic Building Blocks' (BBBs).

70. This new GANP edition endorsed at A40 will be a critical resource as aviation evolves to permit new and emerging aircraft types and entrants to civil aviation operations, and has been re-structured into four distinct levels.

71. These include a **Global Strategic level** for senior decision makers to ensure the system continues evolving based on an agreed and interoperable vision.

72. A **Global Technical level** to support managers faced with implementing new solutions in a cost-effective manner.

73. A **Regional Level** relevant to regional objectives and targets.

74. And lastly a **National Level** assuring the final coordination and harmonization alignment relevant to all global, regional and national air navigation planning.

75. The GANP will be an especially important resource here in the Asia and Pacific, where we find varying levels of air navigation system development coupled with continued and rapid air traffic growth.

76. A variety of solutions are at your disposal to help address your future needs, including the Air Traffic Flow Management solutions some States are now implementing.

77. And from an overall standpoint we must remember that the attainment of safe, secure and environmental friendly air transport across the Region will require effective ICAO compliance and strong commitments and collaboration among States, industry, and other key partners.

78. Coming back to Safety now, to achieve our new goal of zero fatalities by 2030, States, regions and industry need to address what we refer to as the ‘high-risk categories’ of occurrences, or ‘HRCs’.

79. For the 2020-2022 edition of the GASP, aviation’s high-risk categories have been recognized as: controlled flight into terrain; loss of control in-flight; mid-air collision; runway excursions; and runway incursions.

80. The operational safety risks portion of the global aviation safety roadmap is included in the GASP to assist States, regions and industry in addressing the five high-risk categories.

81. A dedicated team composed of subject matter experts from States, International Organizations, Aircraft Manufacturers, and Airlines, worked over two years to produce the newly-endorsed GASP, and by the end of the year ICAO will provide the dashboards associated with the new plan's implementation goals and targets for the global, regional, and national levels.

82. The Asia-Pacific Region was well represented in this group and contributed actively to the GASP's development.

83. I am also pleased to report that the Asia-Pacific Regional Aviation Safety Plan has already been developed and aligned with the new GASP.

84. To support all of these exciting developments, it's important to stress that we need to evolve the way that we manage safety.

85. ICAO Annex 19 – *Safety Management*, provides the framework for a proactive approach to this evolution which introduces safety risk management. This requires regulators, as well as the aviation industry, to develop new competencies.

86. It also requires advanced methodologies and tools related to hazard identification, the conduct of risk assessments, data-driven decision-making, and safety performance measurement and monitoring.

87. A further priority here is the need to look at how we integrate the management of safety risk and security risk for the reduction of overall risk to aircraft operations.

88. Different tools were created to support the implementation of Annex 19 by States, for example the Safety Information Monitoring System, or SIMS, which forms part of the Annex19 reporting infrastructure, as well as SSP fundamentals in full alignment with the GASP goals and targets.

89. The implementation of safety management is not an easy task, but it is not an impossible one either. I am confident that we can strengthen the management of safety if we continue to make progress toward this goal.

90. Another topic I wish to address with you today is competency-based training and assessment.

91. The ICAO Council has recently approved Amendment 7 to the Procedures for Air Navigation Services - Training, which establishes the competency-based training and assessment framework that facilitates an adaptive competency model for all aviation disciplines.

92. The amendment becomes applicable at the end of next year and to support it the manuals are being developed or updated.

93. ICAO will soon embark on incorporating competency-based training and assessment (CBTA) into personnel licensing, recognizing throughout that the industry is evolving, and that the means by which we measure experience in a given aviation field needs to keep up with the times.

Ladies and gentlemen,

94. Prior to our 40th Assembly this year, our A40 delegates were able to appreciate some new model aircraft at the World Aviation Forum and its adjacent Innovation exhibitor Fair.

95. ICAO hosted these events over the two days preceding A40, and both were focused around the theme of air transport innovation.

96. At the ICAO World Aviation Forum (IWAF) especially, we focused not only on the challenges of integrating these new aircraft and operations into traditional flight ops, but also on the important role which regulators will play in proactively engaging new aviation innovators, and how they must seek to facilitate and not impede the implementation of new capabilities.

97. As we adjust to drones or new types of operations above flight level 600, we should not only remain focused on the safety and efficiency performance which are the key value offerings of air transport, but also be vigilant regarding potential threats to the increasingly connected systems supporting contemporary operations.

98. In this regard I am pleased to report that in the Area of Aviation Security this year, the Assembly endorsed the ICAO Cybersecurity Strategy for the air transport sector.

99. This will feature important goals relating to information sharing, improved coordination among all partnering government and enforcement entities, and timely and aligned responses to related risks and events.

100. This reminds us again that the pace of innovation and modernization is accelerating, and that it continues to disrupt the world around us.

101. Changes are underway on a vast scale, with the Internet of Things, accelerating digitalization, and many frontier technologies now transforming economies, governments, and societies in complex, interrelated and unpredictable ways.

102. Government policies and practices, however, have often not kept up with the speed of change.

103. Building a culture of innovation must therefore be a top imperative for not only operators but also States today, and it's recommended to take a portfolio approach to comprehend, foster, and successfully manage the multi-faceted challenges of innovation.

104. This would include, for example:

- Improving their public transparency to enhance trust and fuel innovation.

- Increasing government openness through the leveraging of open source data and the emergence of new business models.

- And taking progressive steps to enhance public engagement through better communications with your industries, businesses and customers.

105. In addition, with the rapid development of big data analytics, artificial intelligence (AI) and machine-learning which continues to transform and impact information collection and analysis globally, governments can utilize these technologies to make information based decision-making and to re-imagine the means by which policy and legislation are originated.

106. In concluding now, ladies and gentlemen, I wished to highlight that besides the areas of Safety and Air Navigation which we have explored here at length, ICAO also achieved some very important new progress at the 40th Assembly which will be key to how we move forward together as a sector and community.

107. Besides the endorsement of the important new Cybersecurity Strategy I mentioned earlier, we were encouraged by States agreement in the Aviation Security domain that ICAO should increase its outreach on the implementation of Advance Passenger Information (API) systems, and on the endorsement of the United Nations Security Council resolution 2396 (2017) urging that an ICAO standard be adopted relevant to Passenger Name Record (PNR) data.

108. In the Environmental Protection area we received new and highly supportive endorsements to continue with the implementation of the CORSIA emissions offsetting approach, and it was also agreed that that ICAO's Committee on Aviation Environmental Protection (CAEP) should initiate an exploratory study on the likely impacts of the new supersonic aircraft being developed, elaborate further on the ICAO Vision for sustainable aviation fuels, and develop new guidance respective of climate change adaptation and resilience.

109. Under our Strategic Objective for the Economic Development of Air Transport, we welcomed States' agreement that ICAO should continue to focus on promoting the socio-economic benefits of air transport, including as this relates to new aviation infrastructure/system financing, and the economics of airports and air navigation services.

110. And we also were encouraged by the governments' support for our work to develop more robust aviation data, monitoring and analyses in the areas of air transport statistics, big data analytics, forecasting and economic analysis.

111. This of course is the briefest of summaries of the vast amount of decisions and actions accomplished at ICAO during our 40th Assembly, and please rest assured that we will continue to welcome the perspectives of Asia and Pacific States as you work to address the world's fastest traffic growth while improving on your already admirable safety performance.

112. It is my hope that I have left you with the impression today that we have a very bright but also very challenging future ahead of us in air transport.

113. And it will therefore be my pleasure now to discuss some of these topics further with you in the short Question and Answer session which has been arranged for us.

114. Thank you.