International Civil Aviation Organization

WORKING PAPER

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ASSEMBLY — 38TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 17: Environmental Protection

ACHIEVE EMISSIONS REDUCTION THROUGH TECHNICAL AND OPERATIONAL MEASURES — WHAT CHINA HAS DONE

(Presented by the People's Republic of China)

EXECUTIVE SUMMARY

Global climate change deeply impacts the existence and development of mankind and is a major challenge faced by all countries. It is an environment issue but it is more of a development issue. The Chinese government attaches great importance to it and has taken active measures to move the relevant work solidly forward. China, though constrained by limited technical capabilities and financial resources, has exerted enormous efforts at aviation emissions reduction and has effectively reduced aviation emissions through upgraded technologies and improved operations. ICAO's purposes and objectives are to develop principles and technical solutions for international aviation. Resolutions of ICAO Assembly should, from the policy level, specify technical and operational measures as the priority means for achieving international aviation emissions reduction, and treat such measures as ICAO's future focus of work to achieve such reductions.

Strategic Objectives:	This information paper relates to Strategic Objective C – *Environmental Protection and Sustainable Development of Air Transport.*
Financial implications:	No additional resources required.
References:	Not applicable.

[1] Chinese version was provided by the People's Republic of China.

1. INTRODUCTION

1.1 Global climate change deeply impacts the existence and development of mankind and is a major challenge faced by all countries. The Chinese government attaches great importance to it and has taken various measures to mitigate and adapt to climate change. In the civil aviation sector, environmental protection is treated as an equally important strategic task as assurance of safety and enhancing quality of services and operational results. Active measures have been taken to move the relevant work solidly forward. In terms of methods, China holds that, at the present stage, technological upgrades and operational improvements are the most direct and effective means to achieve reduction in aviation emissions.

1.2 China, though constrained by limited technical capabilities and financial resources, has exerted enormous efforts at aviation emissions reduction. Over the past five years, despite technical and financial difficulties, CAAC has increased inputs in aviation emissions reduction, giving emphasis to infrastructure building and renovation as well as technical innovation. It is also proposed that, in the next 10 years, the Chinese civil aviation sector will rely mainly on measures such as technical renovation and managerial innovation to ensure that GHG emissions from aviation as a whole grow at a slower pace than the industry itself does.

2. EMISSIONS REDUCTION MEASURES TAKEN BY THE CHINESE CIVIL AVIATION SECTOR

2.1 Upgrading and improving airlines' technical and operational measures for emissions reduction

2.1.1 Since 2010, the Chinese Civil Aviation Administration has all along encouraged domestic airlines to install winglets to their existing fleet or choose new aircraft with such winglets already installed. Winglets were implemented on 93 aircraft in 2012 and another 50 aircraft were scheduled for installation in the first half of 2013. Once complete, those aircraft together will burn 24 800 tons less of fuel per year. It is also estimated that, by the end of 2013, Chinese airlines will have completed or will be retrofitting 212 aircraft engines, which combined would achieve savings of 9 200 tons of fuel per year.

2.1.2 The Chinese civil aviation sector, while striving to improve aircraft (engine) hardware, attaches equal importance to meticulous management of flight operation processes. Chinese airlines are encouraged to, in light of their actual realities, carry out reforms in their flight operations control system and monitor their aircraft (engine) performance in an attempt to reduce fuel consumption through improved operations and management.

2.2 Technical measures for emissions reduction at the airport

2.2.1 "Use of bridge equipage in lieu of aircraft APU" is introduced to all Chinese airports with annual throughput of 5 million passengers or more, resulting in annual savings of 270 000 tons of jet fuel and a reduction of 860 000 tons of CO_2 emissions per annum. In addition to the APU measure, Chinese airports are also engaged in emission reduction initiatives involving the use of clean energy, new heating, air conditioning and lighting technologies and the statistics, monitoring and management system for energy consumption and emissions, through equipment upgrades and improved management.

2.3 **ATC emissions reduction measures**

2.3.1 **Use of alternative routes.** In the four years from 2009 to 2012,1.228 million flights used alternative routes, reducing distance travelled by 46 million kilometres, fuel burn 251 000 tons and CO_2 emissions 795 000 tons

2.3.2 **Collaborative Decision Making (CDM) application.** CDM is capable of calculating and automatically allocating optimal time slots in the immediate 2 hours based on information provided in flight messages and scheduled time for take-off, and, through exchanges with airlines regarding available air space and airport resources and readiness of scheduled flights, giving out appropriate and accurate release sequence, thus improving efficiency in air space use, release timing and quality of airport operations. Airlines, on their part, can use CDM to gain timely knowledge of anticipated flight roll-out time and improve flight punctuality.

3. RECOMMENDATION

3.1 International air transport has made important contributions to accelerated global economic development and social progress. CO_2 emissions from international aviation account for less than 2% of the world's total. Judging from the work done by various countries and China's own experience in aviation emissions reduction, technical improvements and optimal operational measures have yielded good reduction results. It is therefore recommended that resolutions of ICAO Assembly, as a policy tool, should specify technical and operational measures as the priority means for achieving international aviation emissions reduction, and that such measures be treated as ICAO's focus of work in the future for the realization of such reductions.

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