NLA/TF/2-WP/2.1

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Second Meeting of the New Larger Aeroplanes Task Force
(NLA/TF/2) Nairobi, Kenya 10 May 2005

Agenda Item 2: Operation of NLA at existing airports
ICAO Circular 305-AN/177

(Presented by Secretariat)

SUMMARY

In response to the aeroplane manufacturer's announcement of plans to develop aeroplanes larger than the B747 – 400, ICAO made amendments to Annex 14, Volume I to include a new reference code letter F. Consequently, new specifications on aerodrome physical characteristics for these aeroplanes were developed and requirements for RFF Category 10 were introduced.

These NLAs will have substantial impact on existing facilities and services. In order to assist States prepare for the operation of these NLAs, ICAO has published guidance in the form of Cir. 305.

Action by the Meeting:

To take note of the content of the circular and to offer comments and suggestions for improvements or additions.

References:

ICAO Circular 305 – AN/177

1. Until now, airports have been planned and designed based on the physical, technical and operational characteristic of the critical aircraft amongst those operating or expected to operate at that airport. The most demanding in most respects has been the B747-400. Due to their dimensions and/or mass, the NLAs have a substantial impact on existing aerodrome facilities and services. Consequently, aerodromes that shall receive these NLAs have to make necessary modifications to comply with the applicable Annex 14 specifications. In certain cases, such modifications are not practical in which case appropriate aeronautical studies to evaluate the suitability of existing facilities and to determine the need for alternative measures, alternative procedures and operating restrictions have to be carried out.

2. The ICAO Cir. 305-AN/177 has seven chapters as outlined below:-

Chapter 1: Introduction
2: Impact of the characteristics of new larger aeroplanes on the aerodrome infrastructure
3: Methodology for conducting aeronautical studies
4: Aerodrome facilities and services
5: Aircraft operations
6: Air traffic management issues
7: Aeronautical studies

3. The introductory chapter 1 outlines the purpose and scope of the circular. In general, the purpose of the circular is to assist States in addressing the various aspects of operating NLAs at existing aerodromes and to draw attention of States and aerodrome operators to the impact on existing aerodromes of NLAs such as the A380. It provides information on the issues concerning aerodrome facilities and services, air traffic management and flight operations that should be considered in accommodating NLAs at existing aerodromes. The Circular provides guidance on conducting aeronautical studies, including the development of alternative measures, operational procedures and operating restrictions that could, while preserving safety, allow aerodromes that do not meet the relevant Annex 14, Volume I, Code F criteria to accommodate a specific NLA. This circular also addresses the impact of new longer aeroplanes such as the Airbus A340-600 and the Boeing B777-300 which, though belonging to aerodrome reference code E, have a very long fuselage, causing some problems at existing aerodrome stands, taxiway curves and holding positions. The need to conduct a specific study in all such cases and to review the clearances from all relevant angles is emphasized.

4. Chapter 2 relates the characteristics of NLAs to aerodrome dimensions, facilities and services in the movement areas. It provides a comprehensive, but non-exhaustive, checklist of relevant items. The following broad characteristics of NLAs are addressed:-

a) dimensions of NLAs;
b) landing gear characteristics, mass and aircraft classification number (CAN) values;
c) engine data;
d) maximum passenger-and fuel-carrying capacities; and
e) flight performance, including wake vortex.

5. Chapter 3 outlines the safety analysis methodology being one of the ways for conducting aeronautical studies. It is emphasized that a single method be adopted as much as possible for all aerodrome infrastructure items. Reference is also made to the ICAO Doc. 9157, Part 2: Aerodrome Design Manual – Taxiways, Aprons and Holding Bays Chapter 1, paragraphs 1.2.28 to 1.2.65 which contain detail guidance for conducting such aeronautical studies. At Appendix B in the Circular is a list of references to existing studies that may assist States and aerodrome operators in developing their studies. It is emphasized that each of these studies is specific to a particular context and to a particular NLA, and hence caution should be exercised in considering their applicability to other situations and locations.

6. Chapter 4 describes the effect of these NLAs on aerodrome infrastructure and for each

the relevant ICAO SARPS is indicated, the possible hazard is identified and a risk assessment and possible mitigation measures is given as guideline. The items identified to be crucial are:-

a) runways and shoulders;
b) runway strips and runway end safety areas;
c) taxiways and shoulders;
d) bridges, tunnels, and culverts under taxiways;
e) taxiway minimum separation distances; and
f) aprons and holding bays.

7. Chapter 4 also discusses the consideration for the aerodromes operational safety services, in particular the following:

a) aerodrome emergency planning
b) rescue and fire fighting services
c) disabled aircraft removal plan
d) aérodrome maintenance services;
e) obstacle limitation surfaces
f) visual aids – lights markings, signs, etc
g) ground servicing equipments.

8. Chapter 5 discusses considerations during evaluation of aircraft operations issues including air operator certification, flight procedures designs and environmental aspects.

9. Chapter 6 discusses air traffic management issue in particular wake turbulence.

10. Chapter 7 details a description of an aeronautical study; its scope and applicability, its approval process, the development of a study plan and an evaluation of the recommendations and conclusions.
