



Twenty Eighth Meeting of the Communications/ Navigation and Surveillance Sub-group (CNS SG/28) of APANPIRG

WP/24

Update of Flight Inspection Guidance Material (FIGM)

Presented by China and Hong Kong, China

Introduction

- The third edition of the Flight Inspection Guidance Material (FIGM) was adopted by the 26th Meeting of ICAO APAC CNS Sub-Group on 9 September 2022.
- The FIGM is subject to regular review and update.
- The Civil Aviation Administration of China (CAAC) Flight Inspection Center (FIC) and Hong Kong, China have conducted a joint review on the contents of the FIGM and propose updates, with contributions from New Zealand and Singapore, in this paper.



Introduction

- As a continuous enhancement on FIGM, it is recommended to update the sample checklist for commissioning and periodic flight inspection items of Instrument Landing Systems (ILS) to **maintain consistency with the ICAO documents**.



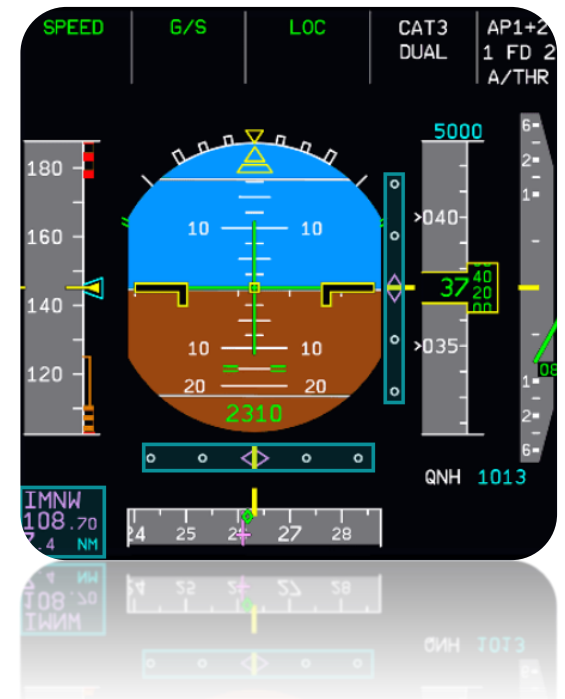
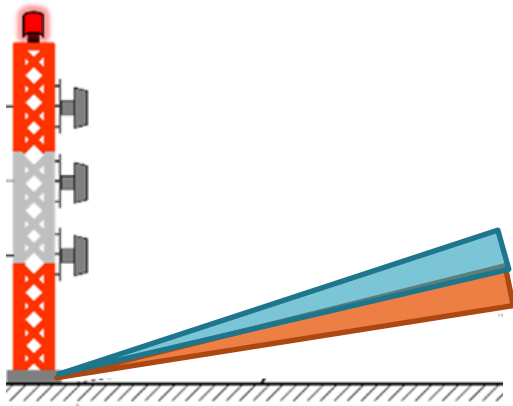
Introduction

- In addition, it is recommended to incorporate the **monitoring of Difference in Depth of Modulation (DDM) during both localizer (LOC) and glide path (GP) coverage checks** as a guideline in the FIGM, as it is considered a good practice to ensure reliable ILS operation and enhance flight safety.



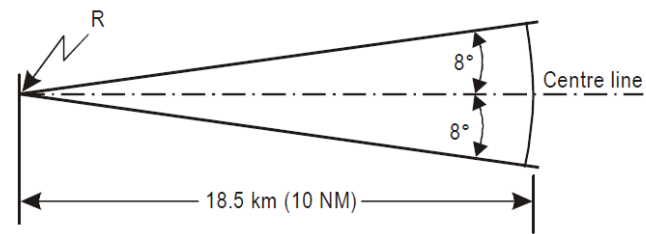
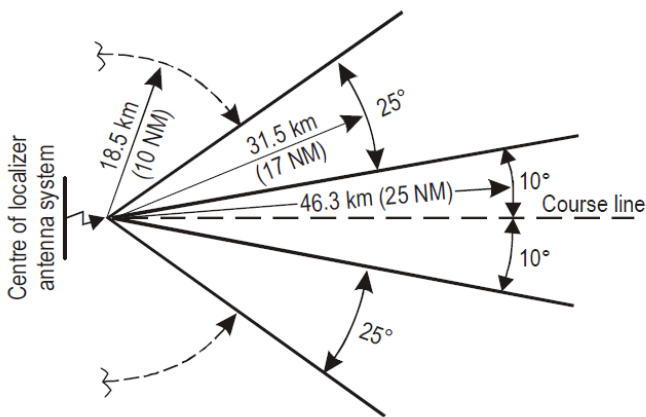
Introduction

- The presence of incorrect DDM values of glide path signals within the usable GP coverage sector can potentially trigger safety concerns. This issue has been observed in several recorded incidents where aircraft experienced **inaccurate fly up or fly down indication during certain arrival procedures** within the GP signal coverage area.

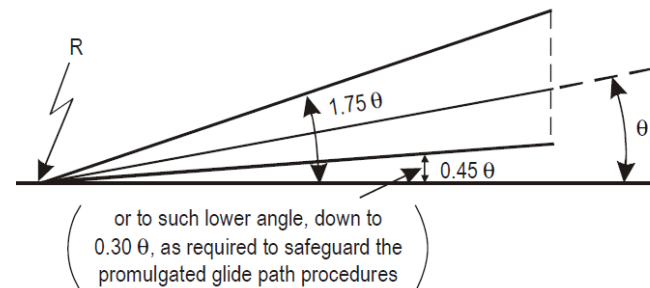


Introduction

- By analyzing the flight inspection results, States/Administrations can determine the extent of usable coverage with correct signal indication and implement measures, if considered appropriate and necessary, for the relevant ILS, should the DDM value be found to be out of tolerance at a specific range / angle.



(a) Azimuthal cover



Discussion

- The paragraph in the FIGM is proposed to be updated for the enhanced guidance of commissioning and periodic flight inspection check items.

ABBREVIATIONS

3.1.2.7 An example checklist of commissioning and periodic flight inspection items for ILS is tabulated below for reference.

Check Item	Commission	Periodic
Identification	X	X
Modulation Balance	X	R
Modulation Depth	X	X
Polarisation	X	R
Front Course Alignment	X	X
Course Structure	X	X
Course Sector Width and Symmetry	X	R X
Off-course DDM Clearance	X	- X
Coverage or Usable Distance	X ⁽⁴⁾	-
Monitor Alarm – Front Course Alignment (Position Alarm)	X	X
Monitor Alarm - Course Sector Width (Width Alarms)	X	X
Monitor Alarm - Off-Course DDM Clearance	X ⁽¹⁾	X
Monitor Alarm – Coverage	X	-
Dual Equipment	X	X ⁽³⁾
Flyability	X	X
Associated Navigation Aids (Nav aids)	X	X ⁽²⁾

Consistent with ICAO Doc 8071

LEGEND:

R	=	To action on request
X	=	To action
-	=	Not required
(1)	=	Capture/Clearance Wide Alarm applies only for a dual frequency localizer
(2)	=	Includes runway visual aids
(3)	=	Alignment, Modulation Depth and Identification Only
(4)	=	Monitoring the DDM value during localizer and glide path coverage checks is recommended to ensure signal integrity

Good practice to ensure reliable ILS operation & enhance flight safety

Discussion

- A draft conclusion is formulated and proposed for endorsement by CNS SG/28 :

Draft Conclusion CNS/SG/28/XX - Update of Flight Inspection Guidance Material (FIGM)	
What: That, the Edition 4.0 of the Flight Inspection Guidance Material (FIGM) provided in Appendix 1 to this paper be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The FIGM is subject to regular review and update, in the light of on-going development of flight inspection standards and recommended practices.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 2-Jul-24	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

Action by the Meeting

- Recognize the contributions from China, Hong Kong China, New Zealand and Singapore on the updated contents;
- Review the proposed updates to the new edition of FIGM in Appendix 1;
- Endorse the Draft Conclusion in paragraph 2.2; and
- Encourage States/Administrations to continue regular review and update of the FIGM, in the light of ongoing development of flight inspection standards and recommended practice.



Thank you

