



International Civil Aviation Organization

**The Sixth Meeting of the APANPIRG ATM Sub-Group
(ATM/SG/6)**

Hong Kong, China, 30 July – 03 August 2018

Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

SID/STAR PHRASEOLOGY IMPLEMENTATION IN AUSTRALIA

(Presented by Australia)

SUMMARY

This paper presents progress on the implementation of ICAO SID/STAR phraseology in Australia. The purpose of the brief is to inform other regional partners of the issues realised following implementation of the procedures.

1. INTRODUCTION

1.1 On 09 November 2017 Australia implemented the ICAO changes to ATC-pilot phraseologies and procedures used during Standard Instrument Departure (SID) and Standard Instrument Arrival (STAR) operations in accordance with ICAO's Amendment 7-A to PANS-ATM.

1.2 The implementation of these procedures has since had a preliminary post implementation review (PIR) with the intent of early rectification of identified safety issues. The PIR included a review of occurrence data, as well as feedback from both ATC and industry.

2. DISCUSSION

Review Outcomes

2.1 **Safety Assessment** - The PIR concluded that following a review of occurrence data and potential hazards, there has been no substantial increase in incidents as a result of implementing the procedures. Of the documented incidents, failure to comply with published level restrictions has been identified as the largest area of concern. Additionally, whilst the data does not suggest a major issue with speed restrictions and SID/STAR phraseologies, feedback from controllers indicates a level of confusion exists amongst both controllers and pilots with regard to speed control phraseology.

2.2 Safety work completed for the implementation of the SID/STAR phraseology, whilst comprehensive in highlighting the impacts of the change on both pilots and controllers, potentially underestimated the task of taking both the controller and pilot base from unconscious competence to conscious competence. The substantial response reported that workload had considerably increased. This was particularly in the case of significant weather events where vectoring was regularly required.

2.3 **Level Restrictions** – Pilots not meeting published level restrictions is the most significant risk for aircraft issued SID/STAR clearances. Increasingly, separation of arriving and departing aircraft is being achieved in Australia by including level and speed restrictions in the design of SIDS and STARs that ensure the separation of aircraft – strategic separation.

2.4 In a surveillance environment, controllers are able to monitor aircraft to ensure they meet published restrictions, providing an additional layer of assurance. However, increasingly SIDs and STARs are being used in limited and non-surveillance environments where pilot compliance is critical.

2.5 Despite the ongoing issue of aircraft not meeting published level restrictions in Australia, there is no evidence from the review indicating that occurrences after 09 November 2017 were as a result of the implementation of the SID/STAR phraseologies.

2.6 **What constitutes ‘on a SID/STAR’** – There has also been some confusion about when the phrases should be utilised. An example of on a STAR is provided to highlight the issue.

6.5.2.4 CLEARANCES ON A STAR

6.5.2.4.1 Clearances to aircraft on a STAR with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. The following phraseologies should be used with the following meaning: ...

2.7 Australia issues a STAR clearance at some distance before the STAR commences – normally prior to top of descent in order to allow pilot planning for descent profile. In relation to 6.5.2.4.1 the discussion is that the aircraft is not “on” the STAR until the aircraft has passed the first waypoint. If however the controller does not utilise the “VIA” phraseology then 6.5.2.4.2 could appear to apply.

6.5.2.4.2 If there are no remaining published level or speed restrictions on the STAR, the phrase DESCEND TO (*level*) should be used.

2.8 Where a STAR has a restriction at the first waypoint failure to use “VIA” would then necessitate the requirements to be repeated with a descent clearance. This would also apply for other requirements that may apply before the first STAR waypoint e.g. 250KT below 10,000ft.

2.9 **SID/STAR Chart Design** – The Australian implementation was delayed as we adjusted how speed information was displayed on the charts. The implementation of these phraseologies has also detected a lack of standardisation that has occurred over time and constraints in some of the designs that do not permit efficient use of the phraseologies.

2.10 A resource has been allocated to review all charts within the Australian AIP against ICAO Annex 4 to detail the changes required for standardisation. All new SID/STAR charts are being designed to ensure that the phraseologies provide an efficient solution, however this work is expected to take some time.

2.11 **Training.** A base training package was prepared by the Civil Aviation Safety Authority for industry and by Airservices for the controllers. The controller’s feedback was that both the content and release date of the training package did not provide enough opportunities for practice.

2.12 Local issues were also not covered in the national controller training. This impacted where groups had specific coordination or tracking requirements that did not fit with the change in procedures. It is recommended that groups be requested to identify local issues when developing the national training as it potentially identifies procedures that are non-standard and hence are problematic when implementing the change.

SID/STAR Amendments

2.13 **Weather Diversions** – A disconnect was identified in how weather diversions were considered by controllers and by pilots. Following consultation with both controllers, industry and advice from members of the ATMOPS panel, it was decided to consider weather deviations to be ‘off the STAR’. This meant that published level and speed restrictions no longer applied in this scenario and that any required restrictions needed to be explicitly issued to the aircraft, resulting in a further workload increase.

2.14 **Readback of ‘VIA’** – An important aspect of the SID/STAR phraseology change was the key understanding by pilots and controllers that the word ‘VIA’ was a trigger word to alert both the pilot and the ATC that restrictions remain on the procedure, and that they must be met.

2.15 Although the release of an AIC at implementation explicitly stated the readback requirement, the Australian AIP (the default for phraseology standards) was not as explicit. In particular, the AIP did not make it clear to the pilot (or controller) that reading back ‘VIA’ is an acknowledgment that restrictions remain on the procedure and that they must be met.

2.16 Following several issues where controllers were either finding it difficult to obtain readbacks, or themselves not following up on missed read-backs, a change to AIP was made adding a note to the readback requirements.

Note: Where level instructions are issued as ‘climb via SID’ or ‘descend via STAR’ pilots must readback ‘VIA’ to acknowledge published restrictions on the procedure will be complied with.

2.17 It is too early to determine if this AIP change has had the desired effect.

Possible Future Amendment Requests

2.18 Further review of the PIR by both the Civil Aviation Safety Authority and Airservices will likely result in additional request for change to the current SID/STAR phraseology procedures. It is evident that SID/STAR phraseology has increased workload, especially with regard to speed restrictions. This is particularly the case in the approach environment.

2.19 Once such issues are properly identified and discussed internally, if a change is deemed necessary then a request for change will be submitted through the ATMOPS panel for consideration.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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