



Agenda Item 7: State and regional updates

OPERATION OF ILS/DMES USING THE SAME FREQUENCY WITH DIFFERENT IDENTIFIERS AT BEIJING DAXING INTERNATIONAL AIRPORT

(Presented by China)

SUMMARY

This paper introduces the operation of ILS/DMEs using the same frequency with different identifiers at Beijing Daxing International Airport, as a possible way to improve frequency utilization efficiency.

1. INTRODUCTION

1.1 Frequency assignment principle of ILS

According to Annex 10 to the Convention on International Civil Aviation, the Localizer and Glide Path transmitter frequencies of an ILS must be paired, and frequencies must be assigned from the 40 paired frequencies. The frequency protection shall be carried out according to Appendix C of Annex 10 and Doc 9718 to avoid mutual interference between frequencies.

1.2 ILS/DMEs used at Beijing Daxing International Airport

Beijing Daxing International Airport has three north-south runways and one east-west runway. Due to the shortage of radio frequency resources, for the three north-south runways, the ILS/DMEs at both ends of each runway use the same frequency with different identifiers. By installing an interlock system, it is ensured that if one direction ILS/DME is in operation, the other remains shut-down simultaneously.

2. Discussions

2.1 The configuration of ILS/DMEs at Beijing Daxing International Airport

The ILS/DMEs of Beijing Daxing International Airport consist of LOC, GP and DME (CAT III operation requires Inner Marker);

- Remote control device and interlock switch are set in the centralized monitoring room;
- and
- ILS equipment and DME equipment are interlock synced.

2.2 The operation of the ILS/DMEs using the same frequency with different identifiers

So far the ILS/DMEs using the same frequency with different identifiers at Beijing Daxing Airport are working well. No operational problems caused by this mode occurred. It alleviated the pressure of frequency resource shortage in Beijing successfully. In order to ensure the reliability of the daily operation, the following operation measures were adopted:

- a) The direction-switching check list is developed, and two technicians are arranged to ensure double check. The technicians will notify the controller immediately that it is planned to do direction-switching. When controller reports the information about switching direction, the technician repeats the instruction;
- b) In the daily maintenance, the connections on the interlock system are checked. If the interlock system fails, the jumper connection method is used to enforce the command of the equipment switch on;
- c) The equipment maintenance is carried out after the runway is suspended, and the equipment operation observation in the secondary landing direction is carried out during the weekly routine maintenance;
- d) When every time the ILS/DMEs directions are switched, the technicians must make sure that the navigation signal be stabilized before they can inform the controller that the navigation equipment is available; and
- e) When switching directions, the navigation signal continuity is interrupted, and air traffic control needs to optimize and adjust procedures so as to adapt to this operation mode.

2.3 Conclusion

The operation mode of ILS/DMEs at both ends of a runway using the same frequency with different identifiers plays a very positive role in utilization efficiency of radio frequency. Relevant measures should be adopted to ensure the reliability of daily operation.

3. ACTION BY THE MEETING

The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.
