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#2 Additional Technical Information for “New Approaches for Haneda”

From March 29, 2020, the new approach procedure at Tokyo International (Haneda) Airport will be in effect from 15:00 to 19:00 JST (06Z to 10Z UTC), during three hours of fine weather with prevailing southerly winds, the RNAV RWY16L/R approach method will be in effect. The take-off runways will be RWY16L/16R and RWY22. In this regard, ALPA Japan has issued additional technical information to operators (especially pilots) to provide safety guidance. This second Additional Technical Information will be provided based on the feedback received after official commencement of the new procedure.

Operation Hours

Conventionally, during southerly winds, the landing runway has been RWY22/23 and takeoff has been RWY16L/R. This operation will continue to apply during all hours except for hours between 15:00 to 19:00 JST and during midnight hours. As a result, there is a high possibility of holding at a certain time after 18:00 JST (09Z UTC) when the runway is changed from RWY16L/R to RWY22/23 in order to secure the control separation (between the last RWY16L/R and the first RWY22/23 landing aircraft). Holding is unlikely to occur due to the runway change at 15:00 JST.

Required ATC Separation

As a general rule, the control separation between aircraft approaching RWY16R is "8NM-8NM-13NM". The reason for this is that "8NM" is for one aircraft each to take-off from RWY16R and RWY22 after landing at RWY16R, and "13NM" is for two aircraft each to take-off from each runway. On the other hand, the control separation between aircraft approaching RWY16L is set at two minutes. This is due to the fact that only a small number of aircraft will be taking off from RWY16L. As a general rule, north and east arrivals (Hokkaido, North America, Europe) will use RWY16R, and south and west arrivals (Western Japan, Okinawa, Southeast Asia) will use RWY16L. In principle, flexible operation for parking spots after landing is not implemented.

Notes on the ILS RWY16L Approach

On the ILS RWY16L APP during southerly winds and inclement weather, pilots have reported that if the APP Mode is set before LORRY (ILS capturing way-point), the auto pilot will deviate to the west of the localizer course by making a right turn after entering LOC capture mode. The pilot should be very careful when selecting the APP Mode, as this may mean that the aircraft is entering the No Transgression Zone (NTZ) and may result in a go-around.

Notes on the ILS RWY16R Approach

The STAR "AKSEL R Arrival" that connects to the ILS RWY16R must pass NIGEL at 6,000ft. This is an altitude restriction agreed upon with the local residents. You must then pass RANGY at 3,000ft. The distance between NIGEL and RANGY is only 5.2 NM, so be sure to use appropriate descent rate.

Notes During the Prevailing Southwesterly Winds.

In winter, northern winds tend to prevail all day long, and from spring to autumn, southerly winds tend to be relatively prevalent in the Tokyo area. In addition, strong southerly and southwesterly winds tend to prevail in the spring. To cope with these wind characteristics, RWY34L/R are used during northerly winds, and RWY22/23 are mainly used during southwesterly winds at Tokyo International Airport. In the past, Tokyo International Airport has served as an alternate airport for Narita International Airport at times because of the availability of suitable runways for changes in the wind (Narita Airport does not have a runway for strong southwest winds).

Under the new operation, which started in March 2020, RWY22/23 will mainly be not available between 15:00 and 19:00 JST. It should be noted that this will result in a combination of the following situations:

- (1) Greater than normal descent angle of 3.45 degrees. (or an unstable path change between 2,000-1,000ft by attempting to align 3degree path before 1,000ft)
- (2) Air will be unstable over the Tokyo city center due to thermal during the afternoon hours.
- (3) Strong southwesterly winds cause rough air at low altitudes due to high-rise buildings.
- (4) Due to the canal on the north side of the airport, there will be rough air on short final (below 1,000ft).

Since the new operation started in spring, several go-arounds occurred during strong southwesterly winds. Pilots who are familiar with Haneda Airport know that it is better to land on RWY22/23 in these weather conditions as they have had no problems with the approach and landing even in strong southwesterly winds. Therefore, if there are safety concerns about a RWY16L/R approach due to crosswind restrictions or other weather conditions, please consider requesting that the RWY22/23 be used for approach and

landing. Although you may have some delays, ATC is more than likely to accept the request.

Note When Requesting an ILS Approach

As a general rule, RNAV approach will be conducted between 15:00 and 19:00 JST during fine weather at southerly wind conditions. If you need ILS approach for any reason, please inform air traffic control (Tokyo Control is preferable) of the reason for the approach as soon as possible. In such cases, it is necessary for ATC to maintain an appropriate separation between you and the aircraft conducting RNAV approach, so that a change in approach order, etc. may inevitably result in a later-than-planned arrival time. It should also be noted that while simultaneous RNAV 16L/R approach is applicable, simultaneous RNAV and ILS approaches are not. Therefore, other arriving aircraft will be affected, such as succeeding and preceding aircraft conducting RNAV approach, which requires a greater than normal control separation. As a result, there may be significant delays even if you inform air traffic control at an early stage, and they may not tell you right away how long the delay will be.

GPWS Warning When Conducting RNAV RWY 16L/R Approach

① "SINK RATE" Warning

During RNAV 16L/R approach, GPWS voice alert "SINK RATE" has been may occurred if the rate of descent is continued to be excessive. This warning uses the rate of descent from the radio altimeter, which is equal to the rate of descent at true altitude. During RNAV approach, this warning occurs when the true altitude descent rate exceeds a certain threshold when the outside temperature is high, and the aircraft weight is heavy. Specifically, this warning occurs at 32ft RA when descending at 1,000ft/min, and at 182ft RA when descending at 1250ft/min. For example, if a B777 performs a (Non-Tailored) RNAV16L/R approach, this warning occurs at 32ft RA at ISA+20°C and 45ft RA at ISA+25°C for a landing weight of 520,000lbs, and 43ft RA at ISA+20°C and 57ft RA at ISA+25°C for a landing weight of 540,000lbs. In addition, warnings also occur when the descent rate is increased due to path correction caused by rough air. Therefore, when the temperature is high and the weight of the aircraft is heavy, it is possible to avoid this warning by making a normal 3-degree approach beyond 1,000ft using Tailored Approach.

② "GLIDE SLOPE" Warning

On the B787 and B737NG with Integrated Approach Navigation (IAN), a single GPWS Voice Alert "GLIDE SLOPE" has been confirmed to occur temporarily during a tailored RNAV 16L/R approach below 1,000ft AFE. This alert will occur beyond FAF due to the following existence of two paths:

- a) the path for IAN (the straight line path from FAF to MAPT) that FMS calculates and
- b) the path for VNAV set by Tailored Approach (variable path). Because this warning occurs beyond 1000ft RA which is the GPWS threshold, the voice alert "GLIDE SLOPE" and the EICAS message are displayed only once, and there is no case where the warning is issued more than twice in a row.