

New Approaches for Haneda

BACKGROUND

Due to the upcoming Olympics in Tokyo, Japan, there is a requirement to increase throughput at Tokyo's Haneda airport. In order to achieve this throughput, it is necessary to introduce approaches to the previously unused approach Runways 16L&R. These runways have not been used for approaches previously due to noise concerns for the public. In order to appease the local public regarding the noise pollution, the JCAB (Japan Civil Aviation Bureau) has created RNP approaches and ILS approaches to runways 16L&R. The ILS approaches are conventional 3° approaches but will only be used in bad weather. The RNP approaches are 3.45° approaches, and will be used exclusively, unless there are bad weather conditions. The criteria for "bad weather" is not defined.

Both runways will also be displaced in order to move the approaches further away from the city. The Landing Distance Available (LDA) OF 16L will be reduced to 9700' and 16R to 8270' but with an EMAS constructed for shortened distance available.

The PAPIs will remain set at 3°, with plans in the future to install 3.45° PAPIs.

The trial will commence on any chosen 7 days from 1 February until 11 March 2020 for aircraft operating between 15:00-19:00 local time, with possible inclusion for arrival flights earlier or later. There will be NOTAM notification of the days and when the trial is completed. All flights will be expected to be included in the trial. If the trial is successful, implementation will commence from 29 March for aircraft operating between 15:00-19:00 local time. Again, there will be NOTAM notification.

JCAB have been informed by IFALPA and IATA that these RNP approaches will probably generate more noise due to the configuration required on approach (gear, flap and speedbrake), as well as the expectation that full reverse thrust will be used on all landings. Noise abatement is the primary consideration of these approaches. There are not intended to be any fines to pilots/operators if aircraft generate excessive noise.

CONCERNS

Simultaneous Independent Parallel Approaches

The RNP approaches will be operated as Simultaneous Independent Parallel RNP approaches, but also permitting non-precision approaches to LNAV minima. This is not in accordance with ICAO recommendations that only APV (Approach Procedure with Vertical guidance) procedures are permitted.

Steep Angle of Approach

The RNP approach is published at 3.45°. This approach path is close to the "Steep Approach" criteria and requires unique handling by the aircrew to manage the energy for the approach.

During the summer months at temperatures sometimes approaching 40°C the approach path will be closer to 3.8°, vastly different to any approach path most pilots have encountered.

Various other factors may exacerbate the energy management on these approaches, such as:

- the common feature of tailwind on approach switching relatively quickly to headwind conditions, increasing the energy of the aircraft;
- gusty southerly wind conditions on short final approach;
- and a major concern that engines will not be spooled up during the latter stages of the final approach path, particularly during wind shear conditions.

Non-Normal Visual Cues

The 3° path is a global standard, and the visual perspective of the runway during the approach is familiar to pilots.

The approach path at 3.45°-3.8° (depending on temperature) is going to look very different to pilots flying these approaches, with the pilots feeling that the aircraft is very high (because it is). This unusual visual perspective will be exacerbated by the PAPIs which may be showing 4 whites for the entire approach, as well as the effect of the displaced thresholds.

The rate of descent will be in the region of 900'/min - 1100'/min, in stable air conditions. In gusty wind conditions there may be instances of higher rates of descent.

It is possible that GPWS "Sink Rate" warnings may be triggered during the approach.

Non-Normal Flare

The aircraft will be approaching the flare at a steeper angle, with a higher rate of descent. The flare technique may need to be modified in order to prevent a hard landing.

The risk of under or over flare is significantly increased and will potentially lead to increased occurrences of hard landings and long landings.

The ability to judge the flare height at night will be more difficult.

Non-Availability of ILS Approach

Should a pilot state that they are "unable" to accept the RNP approach and insist on the ILS approach, they should plan on extensive holding while waiting to be sequenced for an ILS.

If an aircraft initiates a missed approach/go-around during the RNP approach (unstable) and insists on the ILS approach for the second approach, that aircraft should also expect significant holding prior to being sequenced for an ILS.

If multiple aircraft are all becoming unstable during the RNP approach and initiating missed approaches, it is likely that the ILS will be activated and the RNP approaches will be terminated.

CONSIDERATIONS

- Briefings should include energy management and configuration. The effect of temperature on the glide path should also be considered. Simulator trials show that gear down and landing flaps before the FAF allow for the best energy management on the final approach path.
- Brief the possibility of GPWS “Sink Rate” warnings and how they will be managed.
- Brief the strong possibility of becoming unstable, even at low altitude and be “go-around”-minded.
- At all times during the approach, but particularly during final approach, be aware of the thrust status of the aircraft as the engines may need to spool up from idle thrust. This will be particularly important during wind shear conditions.
- Avoid the temptation to “dive” for the correct PAPI indications. This may generate a GPWS warning and possibly destabilise the aircraft.
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- Brief the flare technique and consider the impact of flaring too early or too late.
- With a reduced Landing Distance Available, the briefing should mention the scenario of a long landing.
- Consider carrying extra fuel due to the probability of having to go-around from the RNP approach and the significant holding if the ILS is required.