

 BAVirtual

NOISE PERFORMANCE AT KENNEDY AIRPORT JFK/KJFK

Procedures & Techniques

 Concorde

Revision 1 - Sept 23

0 Preface

0.1 Record of Amendment

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1 Introduction

Noise is a primary factor at John F Kennedy (KJFK) when operating in the New York Terminal Area. Departing and Arriving Concorde Traffic are to adhere to the minimum operation requirements laid out in the document and should be used as supplementary information to the to the Operational Handbook and the Flying Standards set out in the BAV Policy Document.

2 Noise Reduction

2.1 Arrivals

1. Maintain at least 2,000 feet as long as feasible.
2. Runways 31R/L

Aircraft on a Visual approach from a southwesterly direction will be vectored by approach control, to remain off-shore until crossing the JFK 160° radial.

3. Runways 13R/L
 - a. Whenever the ceiling is at least 1,000 feet and the visibility at least three (3) miles, IFR traffic will be vectored in order to be established on the inbound CRI 222° radial prior to the **ASALT** Intersection, with a specified crossing altitude at the CRI VOR, thereafter maintaining visual reference to the lead-in-lights for noise abatement.
 - b. Whenever possible, to reduce disruption to local residents, during the period of 2000-0700 local, weather and traffic permitting, utilise the use of runway 13R.

2.2 Departures

1. All aircraft shall climb as rapidly as practical following the correctly flying technique and noise abatement procedure for the specified runway. This must be carried out ensuring as little disturbance to the local communities as possible.

Note:- All runways at JFK have specific Noise Abatement Procedures which MUST AT ALL TIMES be followed.

NOTE:- Maximum Take-Off Weight at JFK: Restricted to 182250kg.

2. Runway 13R

- a. During the period 2300-0700 local, all departure will be assigned an initial heading of 185°. When the issuance of 185° has been issued as a departure instruction, arrivals on 4R/L will be changes to 13R until delays are no longer a factor.
- b. During the period 2300-0700 local, if operating conditions allow, the tower will remain on the select runways for as long as practical to again keep traffic away from the local communities.

2.3 General

- a. If runway 22L is the active landing runway, simultaneous use of 13R/L between the hours of 1500-1900 local may be effect when the wind is between 132° and 222° and the ceiling is at least 2,500 feet and visibility is at least three (3) miles.
- b. Simultaneous use of 22L for landing when 13R/L are the active runways may be authorised under the same conditions in section a.

3 Runway Utilisation

3.1 Takeoff

As mentioned in the Introduction, noise is a primary factor at JFK and as such, the runway configuration is set in such a way to minimise the resulting noise of arriving traffic of the surrounding communities. The utilisation at JFK is set as follows:-

- 04L The runway MUST NOT UNDER ANY CIRCUMSTANCE be used for transatlantic departures. The maximum weight used for departures off 04R/L is equivalent to 135t, ISA + 10°C, Zero Wind.
- 04R Not to be used under any circumstance
- 31R/13L These runways have not been considered for takeoff. However if circumstances require their use, the take-off weight limit for these runways should be limited to the equivalent of 04L.
- 31L/13R This runway is generally used according to the normal Kennedy runway rotation programme, except as modified by the proposed procedures for the reduction in utilisation of 13R described below.
- 13R For all aircraft operations, this is the most critical runway in terms of noise. 16 years of research shows this runway can be expected to be used 1.5% of occasions - operationally, this should have no major impact on local communities
- When this runway is in operation, pilots can expect radar headings on departure.

Takeoff Runway Statistics

Runway	Predicted Concorde Runway Operation %
04L	0
04R	0
13L	0
13R	1.5
22L	0
22R	53.5
31L	45.0
31R	0

13R should never be used if it is possible to use 31L, 22R or 22L within the Performance limitations of the aircraft.

3.2 Landing

Generally, we can accept any approach runway set by ATC. The standard approach flown by Concorde is the Low Noise Approach, flying at 190 knots until 800 feet. The approach flown by Concorde is best flown at speeds as high as practicable to keep the noise to a minimum. Concorde is certified for a noise abatement procedures, which minimises the noise below the final approach path. This works best when applied to all approaches excluding 13R/L where the interception of the localiser is late on the approach.

Note:- Concorde can accept any runway for landing into JFK. There is a preferential runway order for noise reduction; this is as follows:-

- 04R or L
- 31R or L
- 22R or L
- 13R or L

4 Noise Abatement Procedures

4.1 Takeoff

13R should never be used if it is possible to use 31L, 22R or 22L within the Performance limitations of the aircraft, using a re-clearance technique where necessary. Should use of the 're-clearance planning' fail to reduce the actual TOW sufficiently to allow, in performance terms, the use of 31L, 22R or 22L and/or these runways are unacceptable for ATC reasons, then 13R may be used.

To decide between 31L, 22ft and 22L (the RTOW chart for 22L may be used as a noise advisory chart.

1. Determine the noise advisory Take-Off weight for each runway from the charts.
2. If 31L, 22R or 22L is the ATC runway and the actual TOW is below the noise advisory Take-Off weight then use that runway.
3. If only one runway shows the actual TOW is below the noise advisory Take-Off weight and it is not the ATC runway, then request that runway and adjust taxi fuel.
4. If the actual TOW exceeds the noise advisory Take-Off weights on 31L, 22R or 22L runways, then 22R becomes the preferential runway in all instances provided that the 233°R is available. It is recommended that "Re-clearance Planning" should be considered at the Captain's discretion in order to keep actual TOW below the noise advisory Take-Off weight limit.
5. Should none of the above runways be available, runway 31R or 13L may be used. These two runways are the last choice because both are very noise sensitive.

4.1 Takeoff Runway Noise Abatement Procedures

- 04L**
(Full Length)
1. Turn RIGHT at 100ft RA using 25° bank applied expeditiously.
 2. After throttling maintain between 250 knots onto a heading of 100°M.
 3. Use Normal Open Up Procedure.

NOTE:- Maximum Take-Off Weight 04L: Restricted to 135000kg.

- 13L**
(Full Length)
1. Rotate normally to $\theta 2$ (i.e. in 5 secs) ensuring no over-swing. Stabilise $\theta 2$ with wings level.
 2. Turn RIGHT once stabilised at $\theta 2$ and a rate of climb of 500 fpm has been achieved, using 25° bank (achieved in 6 secs) maintaining $\theta 2$.
 3. At Noise Abatement Time the Engineer cancels reheat and throttles to Noise Power. If the Captain is not satisfied that 235kt will be achieved, he calls 'Negative Noise' to stop the EO cancelling the reheat and throttling back.

Once the Captain is satisfied that the aircraft has achieved 235kt he calls 'Noise' and the Engineer cancels the reheat and throttles back.

5kt to 8kt increase in IAS may be expected between initiation of noise countdown and stabilised speed after throttling for noise. (Thus 230kt becomes minimum speed at initiation of noise countdown). At throttle time the achieved speed between 235-250kt is to be maintained.

Should the speed have increased above 250kt prior to Noise Abatement Time whilst maintaining $\theta 2$ (due to low temperatures and/or low heights). no adjustment to pitch attitude should be made until after the power cutback when 250kt should be sought and maintained.

4. After throttling maintain achieved speed (235-250kt) and turn onto assigned heading (preferably 170°M using no more than 10° bank. If assigned heading has been achieved prior to throttle, maintain heading and throttle at given time.

At JFK 5d increase N2 give Maximum Climb Power (over 10 secs) to accelerate or climb as cleared by ATC.

13R
(Full Length)

1. Rotate normally to $\theta 2$ (i.e. in 5 secs) ensuring no over-swing. Stabilise $\theta 2$ with wings level.
2. Turn RIGHT once stabilised at $\theta 2$ and a rate of climb of 500 fpm has been achieved, using 25° bank (achieved in 6 secs) maintaining $\theta 2$.
3. At Noise Abatement Time the Engineer cancels reheat and throttles to Noise Power. If the Captain is not satisfied that 235kt will be achieved, he calls 'Negative Noise' to stop the EO cancelling the reheat and throttling back.

Once the Captain is satisfied that the aircraft has achieved 235kt he calls 'Noise' and the Engineer cancels the reheat and throttles back.

5kt to 8kt increase in IAS may be expected between initiation of noise countdown and stabilised speed after throttling for noise. (Thus 230kt becomes minimum speed at initiation of noise countdown). At throttle time the achieved speed between 235-250kt is to be maintained.

Should the speed have increased above 250kt prior to Noise Abatement Time whilst maintaining $\theta 2$ (due to low temperatures and/or low heights). no adjustment to pitch attitude should be made until after the power cutback when 250kt should be sought and maintained.

4. After throttling maintain achieved speed (235-250kt) and turn onto assigned heading (preferably $170^\circ M$ using no more than 10° bank. If assigned heading has been achieved prior to throttle, maintain heading and throttle at given time.

At JFK 5d increase N2 give Maximum Climb Power (over 10 secs) to accelerate or climb as cleared by ATC.

NOTE:

- a) **For Take-off Weights below 140,000kg turn Right at 300ft QNH onto a heading of $18^\circ M$ using 25° bank applied expeditiously.**
- b) **If not given a heading of $18^\circ M$ prior to departure, request it and be prepared to delay until request is granted - this is Important for this highly sensitive runway.**

- 22L
(Full Length)**
1. Rotate normally to 8d (i.e. in 5 secs) ensuring no over-swing. Stabilise 2 with wings level.
 2. Once established at 02 and 500 fpm rate of climb has been achieved, turn RIGHT using 25° bank onto a heading of 255°M and maintain 250kt.
 3. At Noise Abatement Time cancel reheat and throttle to Noise Power.
 4. After throttling turn LEFT using not more than 15° bank to establish on JFK 233R.
 5. At JFK 3d turn LEFT onto a heading of 210°M.
 6. At JFK 7d increase N2 to give Maximum Climb Power (over 10 secs).

NOTE:-

- a) **Throttle to Noise Abatement Power at 1.9 DME JFK.**
- b) **If required to maintain Rwy heading no change to TLA and N2 but reduce throttle time by correction (in mins), as follows:-**

TOW	180	175	170	165	160	155	150	140	130	120	110
TIME CORRECTION	-5	-5	-5	-4	-4	-3	-3	-3	-2	-2	-2

- c) **If no heading change approved for takeoff there is no need to delay for such clearance but see Note b) above.**

- 22R
(Full Length)**
1. Once stabilised at $\theta 2$ and a rate of climb of 500 fpm has been achieved, using 15° - 20° bank, turn onto a heading into establish on the JFK 233R. Maintain 250kt.
 2. At JFK 3d turn LEFT onto a heading of 210° M.
 3. At JFK 7d increase N2 to give Maximum Climb Power (over 10 secs) to accelerate or climb as cleared by ATC.

NOTE:-

- a) **If no heading change approved for Take-off accept delay of up to 15mins, but no more, to receive such clearance.**
- b) **If required to maintain Runway heading no change to Throttle Time, TLA and N2 but a violation is likely.**
- c) **Consider Rwy 22L.**
- d) **Throttle to noise abatement power at 1.9 DME JFK.**

31L

(Full Length)

1. Rotate normally to $\theta 2$ (i.e. in 5 secs) ensuring no over-swing. Stabilise $\theta 2$ with wings level
2. Turn LEFT once stabilised at $\theta 2$ and a rate of climb of 500 fpm has been achieved, using 25° bank (achieved in 6 secs) maintaining $\theta 2$.
3. At Noise Abatement Time the Engineer cancels reheat and throttles to Noise Power. If the Captain is not satisfied that 235kt will be achieved, he calls 'Negative Noise' to stop the EO cancelling the reheat and throttling back.

Once the Captain is satisfied that the aircraft has achieved 235kt he calls 'Noise' and the Engineer cancels the reheat and throttles back.

5kt to 8kt increase in IAS may be expected between initiation of noise countdown and stabilised speed after throttling for noise. (Thus 230kt becomes minimum speed at initiation of noise countdown). At throttle time the achieved speed between 235-250kt is to be maintained.

4. At heading of $235^\circ M$ increase N2 rapidly to give Maximum Climb Power and decrease bank angle to 7.5° to enable 2500 feet crossing altitude to be achieved. Maintain 250kt. On achieving JFK 253R again throttle to Bug Power. At CRI 5d slowly increase to Climb Power (over 10 secs).

Note:-

- a) **After passing 2500ft QNH bank angle may be increased to optimise tracking.**
- b) **In the unlikely event of not achieving 2500ft QNH by JFK 253R, leave Maximum Climb Power until passing 2500ft QNH.**

31R

(Full Length)

1. Rotate normally to $\theta 2$ (i.e. in 5 secs) ensuring no over-swing. Stabilise $\theta 2$ with wings level
2. Turn LEFT once stabilised at $\theta 2$ and a rate of climb of 500 fpm has been achieved, using 25° bank (achieved in 6 secs) maintaining $\theta 2$.
3. At Noise Abatement Time the Engineer cancels reheat and throttles to Noise Power. If the Captain is not satisfied that 235kt will be achieved, he calls 'Negative Noise' to stop the EO cancelling the reheat and throttling back.

Once the Captain is satisfied that the aircraft has achieved 235kt he calls 'Noise' and the Engineer cancels the reheat and throttles back.

5kt to 8kt increase in IAS may be expected between initiation of noise countdown and stabilised speed after throttling for noise. (Thus 230kt becomes minimum speed at initiation of noise countdown). At throttle time the achieved speed between 235-250kt is to be maintained.

4. After throttling maintain achieved speed (235-250kt).
 - At a heading of $235^\circ M$ reduce bank to zero.
 - At JFK 280R increase Nz to give Maximum Climb Power to enable 2500ft crossing altitude to be achieved. Maintain 250kt. On achieving JFK 253R again throttle to Bug Power.

At CRI 5d slowly increase N2 to Climb Power (over 10 secs).

Note:-

- a) After passing 2500ft QNH bank angle may be increased to optimise tracking.
- b) In the unlikely event of not achieving 2500ft QNH by JFK 253R, leave Maximum Climb Power until passing 2500ft QNH.