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CAR/SAM Planning and Implementation Regional Group (GREPECAS) Twenty Second Scrutiny Working Group Meeting (GTE/22)
Mexico City, Mexico, 26 to 30 September 2022

Agenda Item 5: Other Business

NEW YORK WEST AIRSPACE HORIZONTAL SAFETY MONITORING REPORT – 2021

(Presented by NAARMO)

EXECUTIVE SUMMARY	
This paper provides the horizontal safety monitoring report for the continued-safe use of the reduced lateral and longitudinal separation minima in New York West Airspace. The safety assessment is conducted according to the methodology endorsed by the International Civil Aviation Organization (ICAO). This work makes use of reported Large Lateral Deviations (LLDs) and Large Longitudinal Errors (LLEs) and Traffic Sample Data (TSD) for calendar year 2021. Overall, there is an increase in the number of reported LLDs/LLEs for calendar year 2021 compared to 2020. There were forty-eight reported occurrences from calendar year 2021 reviewed. Thirteen of these occurrences were determined to be risk-bearing LLDs/LLEs. This report contains a high-level summary of the reported events and evaluates the application of reduced horizontal separation minima.	
Action:	Included in Section 3
Strategic Objectives:	• Strategic Objective 1 – Safety • Strategic Objective 2 – Air Navigation Capacity and Efficiency
References:	• Reported occurrences from calendar year 2021 • 2021 Traffic Sample Data • ICAO Doc 9689 Manual on Airspace Planning Methodology for the Determination of Separation Minima • ICAO Doc 9869 Performance-based Communication & Surveillance (PBCS) Manual • ICAO Doc 10063 Manual on Monitoring Application of Performance-based Horizontal Separation Minima

1. Introduction

1.1 The North American Approvals Registry and Monitoring Organization (NAARMO), a service delegated by the U.S. Federal Aviation Administration to the William J. Hughes Technical Center (WJHTC), fulfills the role of Regional Monitoring Agency (RMA) for the Miami Oceanic, New York West, and San Juan airspace. In addition to the vertical safety monitoring, the NAARMO conducts airspace analyses studies to support the introduction and ongoing use of reduced horizontal separation minima in oceanic airspace.

1.2 In June 2008, a significant restructure of the airways within the New York West airspace was implemented in an effort to increase capacity and efficiency. The fixed route system residing in New York West airspace is referred to as the Western Atlantic Route System (WATRS). With the reorganization of the route system, the 50-NM lateral separation standard was introduced. The WJHTC conducted the safety assessment for the implementation of the 50-NM lateral separation standard in WATRS airspace.

1.3 In December 2013, the 50-NM longitudinal, 30-NM lateral, and 30-NM longitudinal separation minima were introduced in New York West airspace. The reduced horizontal separation minima are available for suitably equipped aircraft pairs. The application of the reduced horizontal separation standards is accomplished when needed between pairs of eligible aircraft; this means that the application of the separation minima is not planned prior to oceanic entry. The WJHTC conducted the pre-implementation safety assessment and the post-implementation monitoring activities for these reduced horizontal separation standards in the New York West FIR.

1.4 While data link equipage has not been mandated in New York oceanic airspace (KZWY), in March 2018, the Performance-Based Communication and Surveillance (PBCS) requirements and monitoring were implemented in New York West airspace. PBCS involves globally coordinated and accepted specifications for Required Surveillance Performance (RSP) and Required Communication Performance (RCP). Beginning 29 March 2018, the PBCS specifications for RCP 240 and RSP 180 and Required Navigation Performance (RNP) 4 specification were required for the application of reduced horizontal separation minima.

2 Discussion

2.1 The flight operations within the New York West Oceanic Control Area (OCA) are comprised of two distinct traffic flows. The two main traffic flows are East-West (North Atlantic (NAT) routes) and North-South (North America (NAM)-Caribbean (CAR) routes).

2.2 The source of traffic data for New York West OCA is the FAA Advanced Technologies and Oceanic Procedures (ATOP) oceanic automation system Data Reduction and Archives (DR&A). These data contain all the reported aircraft positions, as well as the pilot-ATC High Frequency (HF) radio communications and controller pilot data link communications (CPDLC) messages. Figure 2-1 shows the archived reported positions within New York West OCA for 11 December 2021. Position reports received via Automatic Dependent Surveillance - Contract (ADS-C) are contained in the DR&A archives.

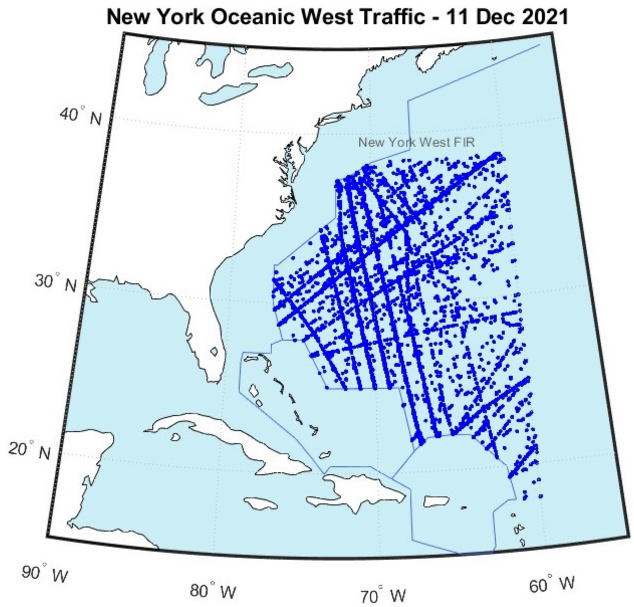

Figure 2-1. Aircraft/Pilot Reported Positions within New York West OCA - 11 December 2021

2.2.1 Figure 2-2 shows the number of flight operations per month for the New York West FIR for calendar year 2020 through July 2022. The vertical axis represents the total number of flight operations observed each month. The reduction in air travel from the COVID-19 pandemic and the recovery is visible in the figure. In January 2020, the average number of flight operations per day was 708 in the New York West FIR. In January 2021, the average number of flight operations per day was 393. In December 2021, the average number of flight operations per day was 676.

2.2.2 In normal times, seasonal variations in traffic volume are expected. Typically, the high traffic period for Miami Oceanic, New York West, and San Juan airspace begins in November and ends in April/May. Figure 2-2 shows that by the end of calendar year 2021, traffic levels are increasing and a sustained recovery in the number of operations is observed in the current data plotted through July 2022.

2.2.3 Figure 2-3 shows the numbers of flight operations per day for calendar year 2021. The average number of flights per day for calendar year 2021 was 448 flights. Figure 2-3 shows the seasonal variation combined with the pandemic related recovery in flight activity.

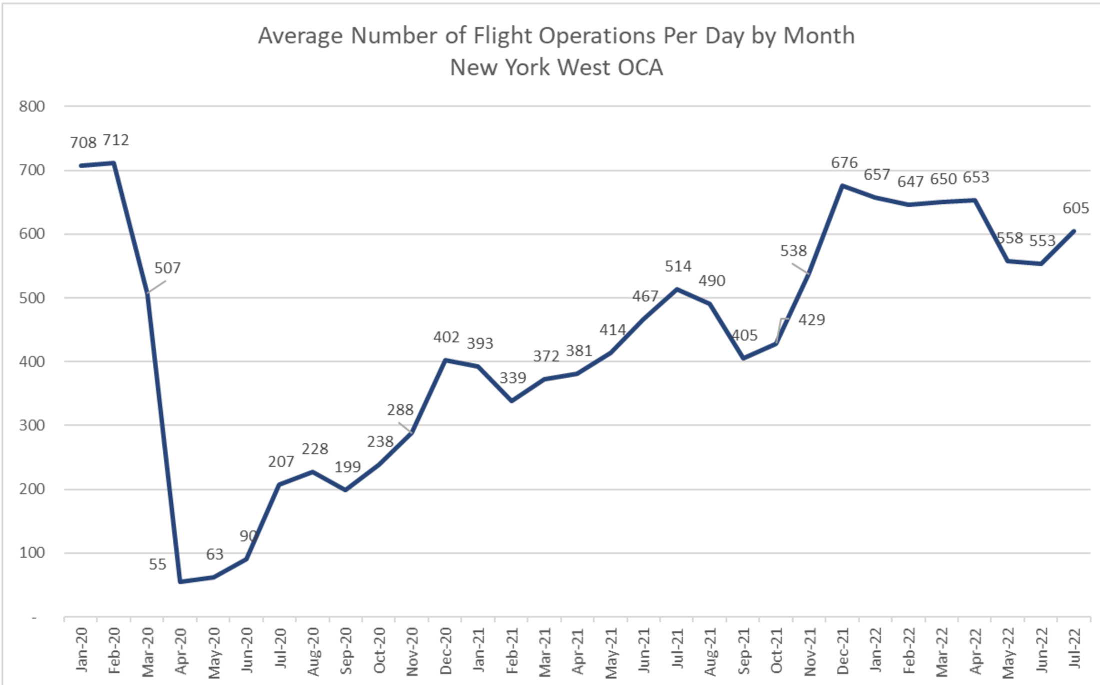

Figure 2-2. New York West FIR, average number of flight operations per day by month – calendar year 2020 through July 2022

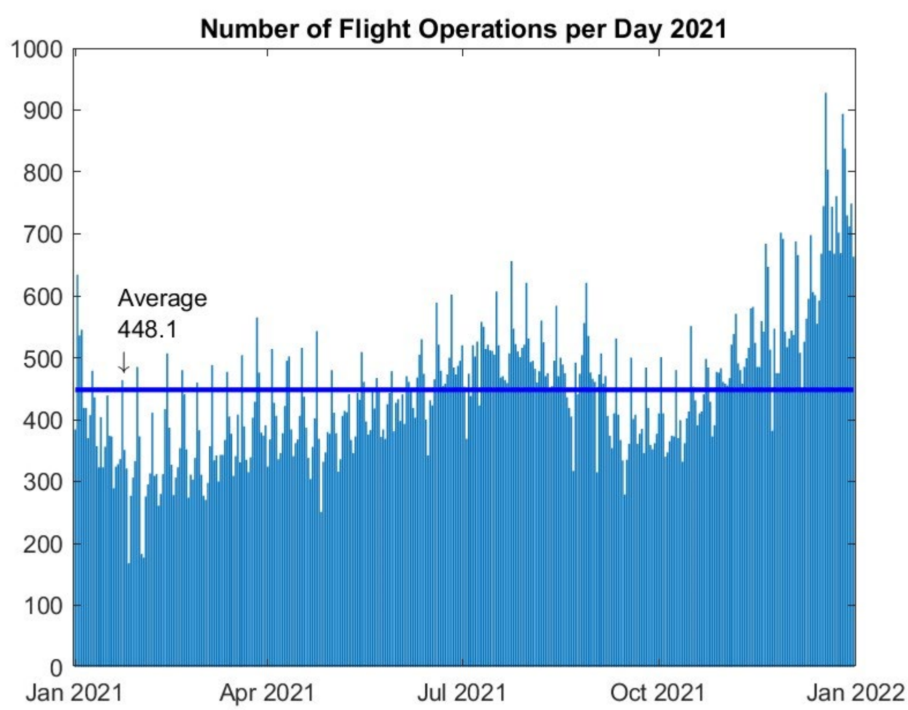

Figure 2-3. New York West FIR, Number of flight operations per day – calendar year 2021

2.3 Event Scrutiny Methodology

2.4 The lateral Collision Risk Model (CRM) methodology is analogous to, and aligns with, the vertical operational risk model, in that it explicitly accounts for the risk due to the number of tracks or routes crossed without clearance, and the risk due to time spent on the incorrect track or route. To employ this methodology, it is necessary to assess the number of tracks or routes crossed without clearance and the time spent on the incorrect track or route for each reported LLD.

2.5 Due to the variety of possible lateral separation standards available to aircraft operations in New York West OCA, the magnitude of the deviation along with the aircraft capabilities are used to determine the number of tracks crossed and time spent on the incorrect track.

2.6 In 2021, the possible lateral separation standards varied depending on the filed Performance-Based Navigation (PBN), Performance-Based Communication (PBC), and Performance-Based Surveillance (PBS) status of the aircraft. Table 2-1 summarizes the possible reduced horizontal separation standards available for aircraft operations within New York West OCA in 2021.

Table 2-1. Horizontal Separation Standards Available in New York West OCA – 2021

Lateral/ Longitudinal	Separation Standard	Minimum PBN	Minimum PBC	Minimum PBS
Lateral	50 NM	RNP 10	-	-
Lateral	30 NM[1]	RNP 4	RCP 240	RSP 180
Longitudinal	10 minutes	-	-	-
Longitudinal	50 NM	RNP 10	RCP 240	RSP 180
Longitudinal	30 NM	RNP 4	RCP 240	RSP 180

2.7 During the scrutiny of each reported event, the filed Communication, Navigation, and Surveillance (CNS) capabilities of the aircraft involved are recorded. This information is used to assess the associated risk impact for each LLD and LLE. For LLD events, the deviation magnitude from the cleared route is examined to determine whether a track crossed should be counted. Table 2-2 shows the Lateral Infringement Distance (LID) used for LLD events to determine the number of tracks crossed. The Number of Tracks crossed, (NT), is determined from the deviation magnitude and the associated LID for the aircraft operation. The LID corresponds to the eligibility of the aircraft based on the filed flight plan not the separation standard applied at the time of the event.

2.8 The LIDs for the New York West OCA shown in Table 2-2 are calculated in the following manner:

- In preparation for the 23NM lateral separation minimum, the LID for aircraft operations eligible for 23NM lateral separation standard is 15NM = 23NM - 4NM [for RNP4] - 4NM [2 × SLOP to account for opposite direction traffic].
- For aircraft operations eligible for 50NM lateral separation standard, the LID is 36NM = 50NM - 10NM [for RNP10] - 4NM [2 × SLOP to account for opposite direction traffic].

[1] The 23NM lateral separation minimum replaced the 30MM lateral separation minimum. The US FAA is planning to implement the 23NM lateral separation minimum in the near future.

Table 2-2. Lateral Infringement Distances (LIDs) for LLD Events

Separation Standard for which the aircraft operation is eligible	LID (NM)
23NM	15
50NM	36

2.9 The methodology to determine the number of routes crossed and time spent on the incorrect route is similar to the methodology used to determine the number of flight levels crossed and time spent on incorrect flight level for the estimate of vertical risk. For example, a reported occurrence indicates an aircraft, which is eligible for the 23NM lateral separation minima, deviated 35NM. This case would result in time spent on the incorrect route and zero tracks crossed. This time would begin when the aircraft is estimated to have reached the 15NM lateral infringement distance, and ends when the deviation amount reaches its maximum or the end of the event.

2.10 Reported Large Lateral Deviations (LLD) and Large Longitudinal Errors (LLE)

2.11 The NAARMO utilizes the FAA's Comprehensive Electronic Data Analysis and Reporting (CEDAR) database, which is a collection of safety-related events reported from various internal FAA sources. There were forty-eight reported occurrences for the airspace during calendar year 2021. The scrutiny group consists of operational experts from the New York air traffic control facility, representatives from FAA Flight Standards and Airspace Safety, and safety analyses experts from the NAARMO. The scrutiny group met virtually several times and reviewed all the reported occurrences from calendar year 2021. After scrutiny group review, thirteen of these occurrences were determined to be risk-bearing LLDs/LLEs.

- There was one reported LLE during calendar year 2021.
- There were three reports of prevented LLDs, in these cases ATC action prevented a deviation.
- There were three reported LLDs in which ATC intervention limited the deviation magnitude.

2.12 Table 2-3 contains a summary of all the risk-bearing LLDs/LLEs by month. The third column of Table 2-3 shows the number of routes crossed without clearance. The fourth column of Table 2-3 contains the sum of the at-risk time for reported LLD occurrences.

Table 2-3. Risk-bearing LLDs and LLEs – 2021

Date		LLD/LLE Count	LLD Routes Crossed	LLD Duration (min)
Jan 2021		0	0	0
Feb 2021		1	0	0
Mar 2021		0	0	0
Apr 2021		0	0	0
May 2021		0	0	0
Jun 2021		1	0	5
Jul 2021		0	0	0
Aug 2021		2	0	6
Sep 2021		0	0	0

Date		LLD/LLE Count	LLD Routes Crossed	LLD Duration (min)
Oct 2021		1	0	17
Nov 2021		5	0	11
Dec 2021		3	0	80
TOTAL		**13**	**0**	**119**

2.13 The scrutiny review determined a general cause for each of the thirteen risk-bearing LLDs and LLEs. Table 2-4 summarizes the reported occurrences by primary cause category.

Table 2-4. Risk-bearing LLDs/LLEs by Cause Category

Category Code	Category Description	Number of Occurrence Reports	LLD / LLE Duration (min)	Number Routes Crossed
A	Flight crew deviate without ATC Clearance	0	0	0
B	Flight crew incorrect operation or interpretation of airborne equipment (e.g., flight plan followed rather than ATC clearance, original clearance followed instead of re-clearance etc.)	2	39	0
D	ATC system loop error	3	46	0
E	Coordination errors in the ATC-unit-to-ATC-unit transfer of control responsibility	6	28	0
G	Navigation errors due to airborne equipment failure leading to a deviation in the horizontal dimension of which notification was not received by ATC or notified too late for action	1	6	0
J	Other	1	0	0
	TOTAL	**13**	**119**	**0**

2.14 Overall, there is a slight increase in the number of reported LLDs/LLEs for calendar year 2021 compared to 2020. There were twelve reported LLDs/LLEs in the previous calendar year 2020.

2.15 There were six reported LLD occurrences in 2021 involving errors in ATC-unit to ATC-unit coordination, category E. In 2020, there were three category E LLD occurrences. One category E LLD occurrence was prevented with help from the Bermuda (BDA) radar. The deviation magnitudes of three category E LLD occurrences were limited by ATC action using the NEXT and NEXT + 1 position information from the aircraft involved. Two of the reported LLD occurrences resulted in both deviation from expected route and unprotected time, the total time associated with the category E LLDs was 28 minutes. Several of the category E LLD occurrences were related to the Holiday Airspace Release Plan (HARP) NOTAMs.

2.16 There were three reported LLD occurrences involving ATC loop errors, category D. One of these occurrences was prevented by ATC before the aircraft entered oceanic airspace. Another LLD category D occurrence involved State aircraft operations and accounted for a duration of 17 minutes. As a result of this occurrence, ATC received refresher training on ALTRV/MARSA procedures. The third LLD category D occurrence was a long-duration LLD, a long-duration LLD has a duration of 20 minutes or more. The estimated duration at an unprotected route for this occurrence was 29 minutes, there was an ATC loss of separation. As a result of this occurrence, there is a software fix for the automation system. This software fix will help alert ATC to assist in identifying a potential incorrect route amendment. As a result of this occurrence, ATC received refresher training related to the entry of route amendments. The total duration for category D LLDs was 46 minutes in calendar year 2021.

2.17 There are two reported LLD occurrences involving flight crews following the filed flight plan rather than the ATC clearance, category B. The total time associated with these two occurrences was 39 minutes. One of the occurrences was a long-duration LLD with a duration of 34 minutes

2.18 There was one reported occurrence classified as Other, category J. In this case there was a discrepancy between the ATC expected route and the route being flown by the air crew. The Filed Flight Plan (FPL) Monitoring Ad hoc Group, which reports to the AIDC/FPL Task Force in the CAR/SAM Region, investigates these issues. In previous years, the NAARMO analysis classified these types of occurrences as category B or E. However, for the 2019 scrutiny review, the NAARMO analysis was informed of the progress of the Filed FPL Monitoring Ad hoc Group. To better observe trends in the various probable causes, a secondary category was created and assigned to each of these occurrences. Currently there are three possible causes for these occurrences.

- Reroute entered into the ATC system by a central Traffic Flow Management Departure unit, which modifies the routing of an original filed ICAO FPL with or without coordination with the AOC dispatch. There is no assurance that the amended routing is provided to the aircraft by the airport ATC clearance delivery.
- Multiple flight plans in the ATC system
- Operator dispatch/flight planner incorrectly issue amendment or change to existing flight plan.

2.19 Figure 2-3 shows the probable causes assigned to the category J occurrence by the scrutiny review group. Figure 2-3 also shows the comparison to the 2019 and 2020 data. The Filed FPL Monitoring Ad hoc Group investigates reported occurrences that involve flight plan anomalies. The focus areas include flight plan formatting and refiling procedures. The FAA maintains a website that provides flight plan guidance to airspace users: https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/air_traffic_services/flight_plan_filing/. There also is a monthly teleconference available for flight plan filing services to discuss flight planning filing issues and standards. The bottom of the website provides the contact information to attend the teleconference.

2.20 Flight plan filing is an important issue due to the dependencies on automated ATC system interfaces. Once errors are observed, the FAA automation experts can develop additional checks for the ATC system. The monthly teleconference provides guidance to the airspace users and provides an opportunity for ATC operations to update users on the observed issues. One of the objectives of the monthly teleconference is to reduce the number of observed errors

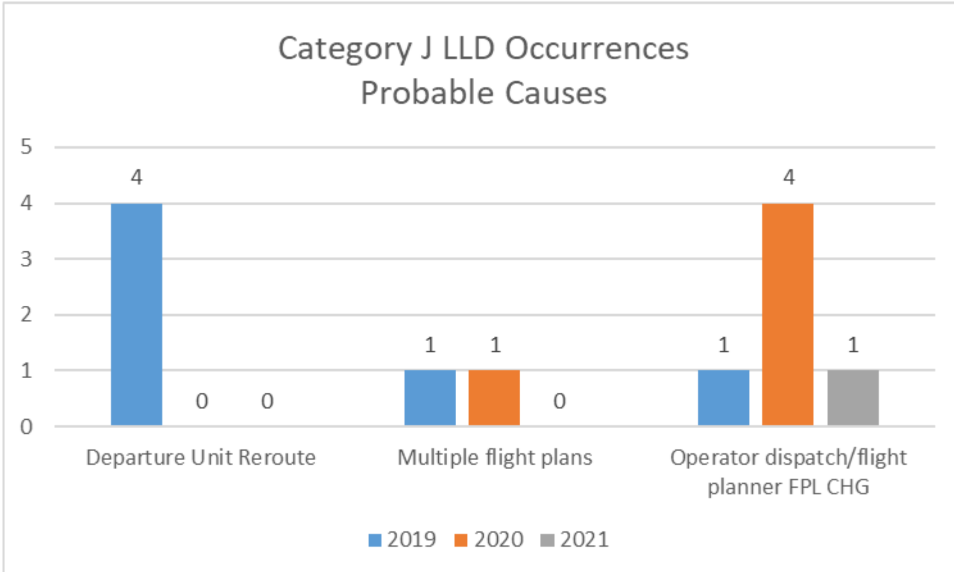

Figure 2-3. Category J Occurrences

2.21 Figure 2-4 shows the locations of the risk-bearing LLDs/LLEs in 2021. The size of the circle is determined by the relative ratio of the associated duration at that location. There six LLD/LLE reports that had zero duration associated with the reported occurrence. Figure 2-4 includes these six zero-duration reports, which are represented with the smallest circles.

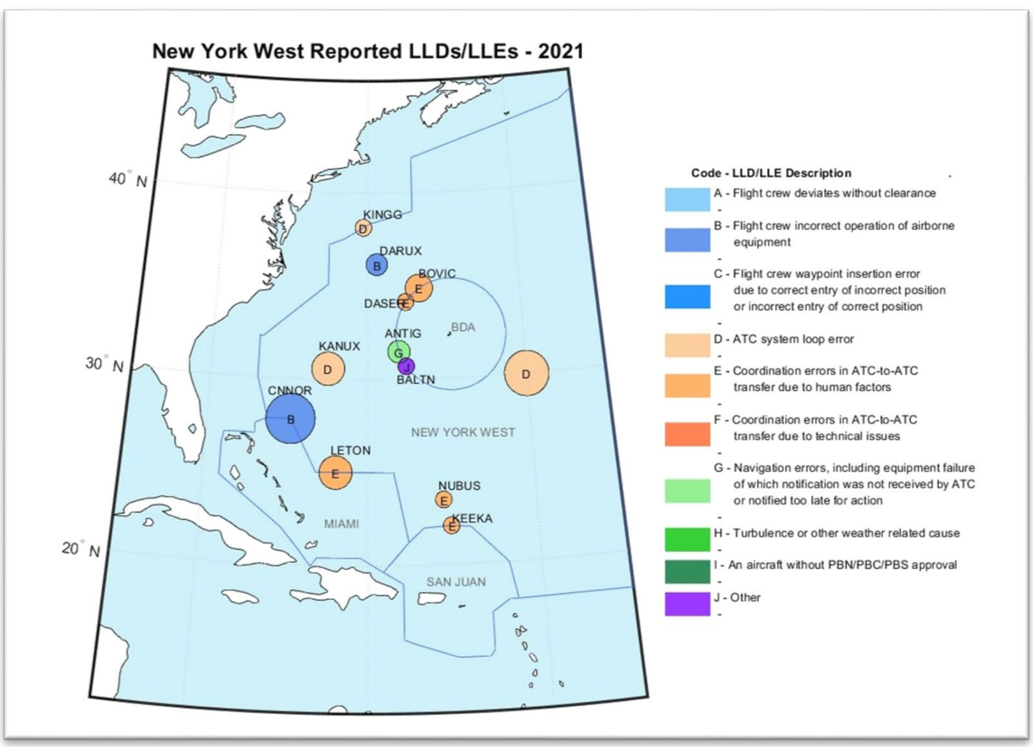

Figure 2-4. Locations of Risk-bearing LLDs/LLEs

2.22 The standard lateral separation in New York West OCA is 50NM; aircraft indicating RNP 10 in the filed flight plan are eligible for this separation, there is no PBCS requirement for the 50NM lateral separation standard.

2.23 The standard longitudinal separation is 10 minutes. The airspace is not exclusive with regard to airspace user satisfaction of horizontal-plane navigation standards as a requirement for airspace use and does allow for non-RNP 10 operations.

2.24 Eligible flight operations for the 23NM lateral separation standard must file RCP240, RSP180 and RNP4 in their flight plan. The proportion of RCP240, RSP180 and RNP4 operations in New York West OCA observed in December 2021 is 45 percent. This is a twenty-five percent increase over that observed for December 2020.

2.25 Lateral Collision Risk Estimation

2.26 This section of the paper provides the parameter estimates used in the ICAO lateral risk model. The collision risk methodology consists of a mathematical model to estimate risk for comparison to the safety criterion, the Target Level of Safety (TLS). The section also provides information on the sources of data used to estimate risk model parameters. Based on the December 2021 traffic data, the NAARMO estimates approximately 298,471 annual flying hours for New York West OCA. This represents a 75 percent increase in air traffic operations the same estimate for 2020.

2.27 Aircraft Types Observed in New York West OCA

2.28 Figure 2-5 provides the top 25 aircraft types observed in the December 2021 traffic data by flying hours. The aircraft types in Figure 2-5 account for more than 87 percent of total flying hours observed the airspace.

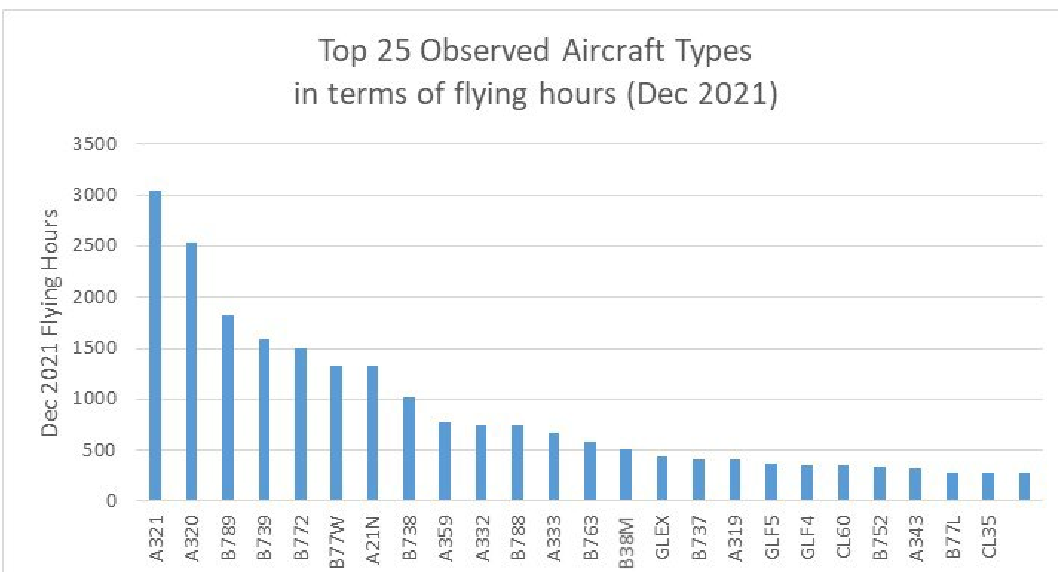

Figure 2-5. Observed Aircraft Types in Terms of Flying Hours in New York West OCA

2.29 Aircraft Size

2.30 The collision risk model parameters related to the aircraft size are: length, wingspan, and height. These parameters are estimated directly from the ATOP DR&A December 2021 data and related aircraft specifications. The weighted dimensions are calculated using the actual dimensions of the aircraft type multiplied by the proportion of total flying time observed for the type in the traffic sample. The resulting CRM parameters for the aircraft length, wingspan, and height are presented in Table 2-5. Typically, there is small changes in the average aircraft size from year to year. However, in 2021, the observed increase in the average aircraft size by dimension length, width, and height is 11-ft, 12-ft, and 3-ft, respectively.

2.31 Same-Direction and Opposite-Direction Lateral Occupancy

2.32 The traffic data are used to estimate the number of lateral aircraft pairs. A lateral aircraft pair is observed when two aircraft, operating on the same flight level and on laterally separated routes, have reported positions within 15 minutes. Table 2-6 shows the same and opposite-direction lateral occupancy estimates for New York West OCA. Because most of the aircraft operations occur on fixed routes with a Flight Level Allocation Scheme (FLAS) in place, there were very few observed opposite-direction lateral aircraft pairs in the traffic data. The lateral separation used to determine the lateral occupancy values is 50NM. There was a slight increase in the lateral occupancy values in 2021 compared to 2020.

Table 2-6. Same and Opposite direction lateral occupancy values - 2021

Airspace	Same Direction Lateral Occupancy Value	Opposite Direction Lateral Occupancy Value
New York West OCA	0.0694	0.0019

2.33 Probability of Vertical Overlap

2.34 The probability of vertical overlap accounts for contributions to vertical error arising from the effects of turbulence, loss of altitude hold and crew response to airborne collision avoidance system alerts as well as from errors in aircraft altimetry and altitude-keeping system performance. In the horizontal risk analysis, the probability of vertical overlap reduces the calculated horizontal collision risk by the fraction of time that the aircraft may not be vertically aligned during a horizontal overlap.

2.35 Estimates of aircraft Altimetry System Error (ASE) are obtained from aircraft height monitoring processes developed by NAARMO. These processes require several data sets, including meteorological and aircraft geometric height data. Aircraft geometric data is obtained from either the U.S. Aircraft Geometric Height Measurement Element (AGHME), Automatic Dependent Surveillance - Broadcast (ADS-B) data, or the GPS Monitoring Unit (GMU) system. Control of aircraft ASE is one of the principal objectives of the State Reduced Vertical Separation Minimum (RVSM) approval process, which must be held by operators in airspace where the RVSM is applied.

2.36 The NAARMO estimate for the probability of vertical overlap for aircraft pairs operating on the same flight level, $P_z(0)$,used in the estimation of vertical operational risk is 0.42.

2.37 Time Spent on Incorrect Route

2.38 The proportion of flying time spent on incorrect routes is determined as the ratio of the amount of time spent on incorrect routes to the total amount of flying time in the airspace during the period when the incorrect route events occurred. The risk-bearing LLDs for calendar year 2021 contain 113 minutes of flying time spent on incorrect routes. This is a significant increase in the number of minutes spent on incorrect routes compared to that reported for calendar year 2020. In calendar year 2020 there were 4 minutes of flying time on in correct routes.

2.39 The proportion of flying time spent on incorrect routes is estimated using the reported LLD duration and dividing by the estimated flying hours. The estimated annual flying hours for New York West OCA obtained from the ATOP DR&A data are 298,471 hours. The resulting ratio of time spent on incorrect routes is 3.79 × 10-4 for New York West OCA, this value is multiple orders of magnitude higher than estimated for calendar year 2020.

2.40 Probability of Lateral Overlap

2.41 The probability of lateral overlap accounts for contributions to lateral error arising from navigation system performance. The probability that two aircraft operating on the same route and flight level are in lateral overlap, P_y (0), is 0.1. This value is currently used in lateral risk estimates in the Asia and Pacific Region. This value is expected to increase with the use of Global Navigation Satellite System (GNSS) in aircraft navigation systems.

2.42 The probability that two aircraft operating on adjacent routes and the same flight level are in overlap, P_y (S_y), is determined from the value of P_y (0) and the risk-bearing LLDs. The lateral separation standard is represented by the term S_y. There are two estimates of P_y (S_y), one for the time spent on incorrect route and another for the number of incorrect routes crossed. The P_y (S_y) value for time spent on incorrect routes is shown below.

$$P_y(S_y)_T = \frac{T_r}{F(NY)} \times P_y(0)$$

2.43 The total time spent on incorrect routes during a calendar year is represented by the term Tr. The estimated annual flying hours for New York West OCA is given by F(NY). The Py(S_y) value for the number of incorrect routes crossed is shown below.

$$P_y(S_y)_X = \frac{N_r}{F(NY)} \times \frac{2\lambda_y}{\overline{|\dot{y}_r|}}$$

2.44 The number of routes incorrect routes crossed is represented by the term N_r. The term $\overline{|\dot{y}_r|}$ represents the lateral closer rate of aircraft crossing through an incorrect route.

2.45 Collision Risk Model Parameters

2.46 The individual parameters of the models, their definitions, estimates, and sources are given in Table 2-7.

Table 2-7. Lateral Collision Risk Model Parameter Estimates - 2021

Term	Definition	Estimate	Source
$P_z(0)$	Probability that two aircraft operating on the same flight level are in vertical overlap	0.42	Value used in the vertical risk estimates for Pacific airspace
$P_y(S_y)_T$ *for time spent on incorrect route*	Probability that two aircraft assigned to laterally adjacent tracks lose all planned lateral separation and are in lateral overlap due to time spent on incorrect route.	6.31×10^{-7}	Estimated from traffic data, and risk-bearing LLDs (113 minutes spent on incorrect route)
$P_y(S_y)_X$ *for incorrect routes crossed*	Probability that two aircraft assigned to laterally adjacent tracks lose all planned lateral separation and are in lateral overlap due incorrect routes crossed.	0	Estimated from traffic data, and risk-bearing LLDs (zero incorrect routes crossed)
$P_y(0)$	Probability that two aircraft on the same track are in lateral overlap	0.1	Value used in the vertical risk estimates for Pacific airspace
λ_x	Average aircraft length.	0.0261 NM	Estimated from New York West OCA traffic data
λ_y	Average aircraft wingspan.	0.0238 NM	Estimated from New York West OCA traffic data
λ_z	Average aircraft height.	0.0074 NM	Estimated from New York West OCA traffic data
$E_y(same)$	Same-direction lateral occupancy for a pair of aircraft on same flight level on adjacent routes.	0.0694	Estimated from New York West OCA traffic data
$E_y(opp)$	Opposite-direction lateral occupancy for a pair of aircraft on same flight level on adjacent routes.	0.0019	Estimated from New York West OCA traffic data
$\overline{\lvert \Delta V \rvert}$	Average absolute relative along-track speed between aircraft on same-direction routes.	13 knots	Value used in the North Atlantic, Pacific, and US Domestic airspace lateral risk estimates
$\overline{\lvert V \rvert}$	Average absolute aircraft ground speed.	480 knots	Value used in the North Atlantic, Pacific, and US Domestic airspace lateral risk estimates
$\overline{\lvert \dot{y} \rvert}$	Average absolute relative cross-track speed for an aircraft pair assigned to adjacent routes as the y lose all planned lateral separation, S_y.	5 knots	Value used in the North Atlantic, Pacific, and US Domestic airspace lateral risk estimates
$\overline{\lvert \dot{y}_r \rvert}$	Average lateral closure rate of aircraft crossing through an incorrect route	80 knots	Value used in the NAT lateral risk estimates
$\overline{\lvert \dot{z} \rvert}$	Average absolute relative vertical speed of an aircraft pair assigned to the same flight level which are in vertical overlap	1.5 knots	Value used in the North Atlantic, Pacific, and US Domestic airspace lateral risk estimates
F(NY)	Estimated flying hours within New York West FIR	298,471	Estimated from FAA ATOP DR&A for New York West OCA

2.47 Results and Conclusions

2.48 The reported risk-bearing LLDs within New York West OCA are applied to the estimated flying hours and lateral occupancy values for New York West OCA. There was zero incorrect routes crossed and 113 minutes spent on an incorrect route. The lateral risk estimate is 3.86×10^{-9} fatal accidents per flight hour (fapfh). This estimate meets the overall safety goal of 5.0×10^{-9} fapfh.

3 Action by the meeting

3.1 The GTE is invited to note and discuss the information provided.

— END —