

Town and Country Planning Act Section 106/299A

# Environment Report 1 January to June 2023

Farnborough Airport Ltd Farnborough Hampshire GU14 6XA

#### 1. INTRODUCTION

1.1 In compliance with the requirements of the agreement in place under Sections 106 and 299A of the Town and Country Planning Act 1990 between Farnborough Airport (FAL) and Rushmoor Borough Council (RBC), FAL hereby submits a report for January to June 2022, detailing results of environmental monitoring as required by clause 1.3, 2.8a, 2.8b and 3.4.

#### 2. NOISE MONITORING

2.1 Two permanent noise monitoring terminals (NMTs) continuously operate at the sites of Tweseldown Racecourse and Farnborough College of Technology, approximately one mile from the airfield and beneath the typical arrival and departure flight path.

Portable NMT is provided for ad-hoc monitoring in connection with trials of alternative Noise Abatement Procedures or in response to requests from groups or individuals in the surrounding community.

- 2.2 Correlated Noise data (dB(A) L<sub>eq16</sub>) recorded by the fixed NMTs for "Aircraft", "Community" and "Total" noise is tabulated in Appendix A.
- 2.3 Tweseldown Racecourse events have the potential to influence values for "community" and "total" noise at the Tweseldown NMT. The following events took place at the racecourse during the reporting period:
  - May 19th 22nd
- 2.4 All three operational NMTs were subject to calibration by an independent specialist on the 21st March 2023. All data submitted during this period is valid.
- 2.5 Noise contours produced using the FAA's Integrated Noise Model (INM 7.0d) for previous year business movements, together with predicted contours for the year ahead, were submitted to RBC in February 2023 in accordance with the requirements of the agreement between FAL and RBC. The modelling exercise results are given below in Table 1, along with those included within the planning agreement. The predicted noise contours were generated using movement data (flight tracks) from the study year, taking into account the forecast growth for the year ahead (including predicted helicopter movements).

Table 1: Most Recent Results of the INM Modelling exercise

dB L <sub>Aeq,16h</sub>	Control Contours Predicted 20,000 (km²) movements (1997 mix)	Amended Control Contour Areas (km²) as per clause 12.1a of the S106 (29/10/2010)	Actual contour areas 2022 (km²) (Based on 32,598 movements)	Predicted contour areas, 2023 (km²) (Based on 3% increase on 2022 movements of fleet mix)
55	9.07	6.58	2.39	2.45
60	4.03	2.42	1.02	1.04
65	1.70	N/A	0.50	0.51

- 2.6 Contours relating to actual movements for January to June and predicted contours for July to December this calendar year will be submitted to RBC in August with the INM report.
- 2.7 Use of the dB(A) L<sub>eq16</sub> contour is internationally recognised as a means of noise measurement. A 66 dB(A) L<sub>eq16</sub> indicates that the average level of noise during a 16-hour day is 66 dB(A).
- 2.8 The 55 dB(A) L<sub>eq16</sub> contour, used in agreement with Rushmoor, is below that deemed to be the trigger of "low annoyance" in the Wilson Committee Report (1963), a report traditionally used as a method of assessing the probability of annoyance due to aircraft noise.

- 2.9 In accordance with the requirements of the Section 106 Agreement FAL uses INM 7.0d to produce noise contours. This version of the software includes helicopter movements and considers surrounding terrain within the modelling process.
- 2.10 Daily dB(A) L<sub>eq16</sub> Figures are given in Appendix A.

#### 3. AIRCRAFT MOVEMENTS

3.1 Table 2 displays a summary of aircraft movements for the reporting period by movement category.

Table 2: Movements summary by type

Category	Jan	Feb	Mar	Apr	May	Jun	Report 1 Total
Business	2084	2135	2372	2118	2752	3194	14655
Helicopter	52	55	54	84	108	96	449
Subtotal (Reported under planning obligations)	2136	2190	2426	2202	2860	3290	15104
Military	5	6	9	13	30	4	67
Flying Club	26	29	23	38	42	39	197
Other	62	42	53	73	82	39	351
ADS	0	0	0	0	0	0	0
Total	2229	2267	2511	2326	3014	3372	15719

3.2 Tables 3 and 4 display a summary of movement percentages against the total for each month, by category for weekdays and weekends.

Table 3: Percentage summary by category for weekday movements

	Jan	Feb	Mar	Apr	May	Jun
Business	68.2	64.3	73.4	61.3	62.6	71.9
Helicopter	1.9	2.2	1.8	2.8	2.5	2.1
Military	0.0	0.2	0.3	0.4	0.8	0.1
Flying Club	0.9	0.7	0.4	0.9	1.0	0.9
Other	2.5	1.7	2.0	2.7	2.3	0.9
ADS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	74	69	78	68	69	76

<sup>\*</sup> totals to the nearest whole percent

Table 4: Percentage summary by category for weekend movements

	Jan	Feb	Mar	Apr	May	Jun
Business	25.3	29.9	21.1	29.7	28.7	22.8
Helicopter	0.4	0.3	0.3	0.9	1.1	0.7
Military	0.2	0.1	0.0	0.2	0.2	0.0
Flying Club	0.3	0.5	0.6	0.7	0.4	0.3
Other	0.3	0.2	0.2	0.4	0.4	0.3
ADS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	26	31	22	32	31	24

3.3 Table 5 displays runway use data. Operations are divided into Arrivals, Departures and those undertaken by helicopters without use of the runway (Aerodrome).

Table 5: Runway in use (as percentages) by mode of operation

	Jan	Feb	Mar	Apr	May	Jun
06 Arrival	5	11	10	20	31	5
06 Departure	5	11	11	21	30	5
24 Arrival	45	39	39	29	19	45
24 Departure	44	38	39	28	19	44
Aerodrome (Heli)	1	1	1	2	1	1

- 3.4 Table 6 displays Maximum Take Off Weight data for aircraft operated during this reporting period, reflected as a percentage of the overall movements in each month.
- 3.5 The month of May saw a unusually long sustained period of weather which lead to a significant increase in the usage of Runway 06.

Table 6: Percentage by Maximum Take-Off Weight (MTOW) against monthly movements total

	Jan	Feb	Mar	Apr	May	Jun
Over 50t	2	2	2	2	3	4
50t or less	98	98	98	98	97	96

- 3.5 All civil aircraft using Farnborough between during the reporting period were compliant with the International Civil Aviation Organisation (ICAO) Chapter 4. All aircraft must provide certification of Noise Chapter prior to permission being granted to operate.
- 3.6 Helicopters, light aircraft and turbo-prop aircraft are not subject to the requirements of the ICAO noise certification scheme.

#### 4. AIR QUALITY MONITORING

- 4.1 The locations of the thirteen Nitrogen Dioxide diffusion tubes and the two Learian Streetbox monitors remain as previously reported, to see details of the locations of the monitors please refer to previous reports prior to the first quarter of 2005.
- 4.2 Table 7 displays the standards accepted by the Government and recommended by the expert panel on air quality standards.

Table 7: Objectives included in regulations for purposes of local Air Quality Management

Dellutent	Air Quality Objective		Date to be achieved by
Pollutant	Concentration	Measured as	and maintained thereafter
NO <sub>2</sub>	200µg/m³ (105ppb) not to be exceeded more than 18 times a year	1 hour mean	1 <sup>st</sup> Jan 2010
NO <sub>2</sub>	40μg/m³ (21ppb)	annual mean	1 <sup>st</sup> Jan 2010

<sup>&</sup>lt;sup>a</sup> Conversions of ppb and ppm to μg/m³ and mg/m³ at 20°C and 1013mb. ppb = parts per billion, μg/m³ = micrograms per cubic metre. Source: <a href="https://uk-air.defra.gov.uk/assets/documents/National\_air\_quality\_objectives.pdf">https://uk-air.defra.gov.uk/assets/documents/National\_air\_quality\_objectives.pdf</a> (last updated 22-09-17)

4.3 Air quality monitoring results consist of raw and ratified by a third-party consultant. Data taken from the Learian Streetbox Monitors consists of hourly mean concentrations of NO<sub>2</sub>. As this data

<sup>\*</sup> totals to the nearest whole percent

set is extensive when covering a six-month period, it has been displayed as monthly means for the purpose of this report.

4.4 Passive and active NO<sub>2</sub> monitoring results are detailed in Figures 1 and 2.

Figure 1: Passive NO<sub>2</sub> monitoring results, January to June

N.B. ppb - parts per billion expressed as a monthly mean. This data has not had a bias adjustment applied

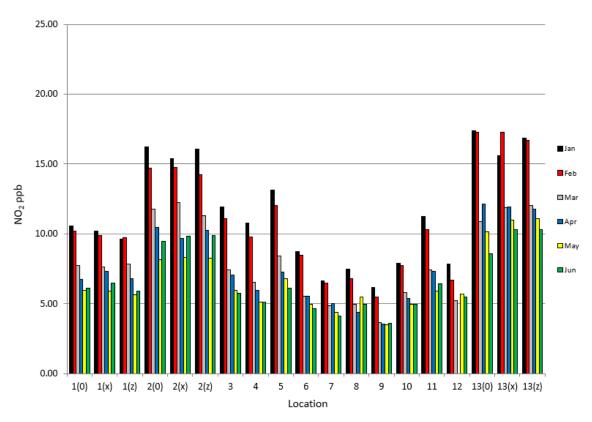
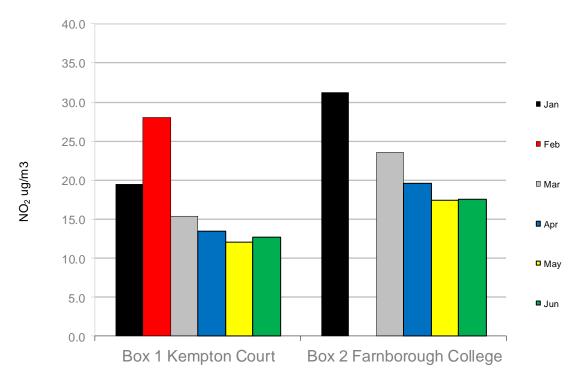


Figure 2: Active NO<sub>2</sub> monitoring results, January – June



Box no. and location

N.B. μg/m3 expressed as a monthly mean

- 4.5 The results taken from the diffusion tubes indicate that NO<sub>2</sub> levels around the airfield and local communities during the reporting period have achieved the objectives within the regulations for the purpose of Air Quality Management.
- 4.6 Trends in the results still indicate terrestrial sources of NO<sub>2</sub> as predominate contributors to the higher data points particularly at location two and thirteen.

### 5. CONCLUSION

- 5.1 Routine monitoring of compliance with noise abatement routes, air quality targets, and aircraft movements continues at the Airport. To date, all environmental monitoring undertaken has been implemented in accordance with the regulatory requirements and those of the Town and Country Planning Act Section 106 Agreement.
- 5.2 All movements operated at the airport are restricted to those permitted by the terms of the planning consent and the accompanying agreement.
- 5.3 NO<sub>2</sub> levels recorded by monitoring stations remain compliant with applicable legislation.
- 5.4 The activities at the airport remain within the specifications of the Section 106/299A agreement.
- 5.5 Box 2 Farnborough Collage has missing data as the box was out for calibration. Diffusion tube 12 data is missing in April.

Gareth Andrews
Sustainability Manager
Farnborough Airport
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21/07/2023

Appendix A

Farnborough Airport

Total Noise By Day of Month and NMT

Start Date:01-Jan-2023

End Date: 30-Jun-2023

# January 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	52.7	51.4	59.3	60.4	55.8	54.9	58.7	54.1	59.2	59.9	60.6	61.7	67.1	63.5	57.8	56.8	54.6	53.6	53.3	54.5	53.4	52.1	53.5	52.8	53.3	54.2	53.1	50.3	52.5	52.9	56.7
3	53.8	58.3	60.1	59.1	57.0	59.1	58.8	57.7	59.6	59.2	58.6	59.2	58.6	58.5	56.3	57.5	56.4	58.4	56.7	59.0	55.4	55.7	56.0	56.3	58.6	56.7	57.2	53.9	54.6	58.3	57.5

### February 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1																												
2	57.3	58.3	53.7	51.5	50.8	52.3	51.4	52.7	53.9	52.6	53.3	51.6	51.9	50.5	52.5	52.9	58.3	59.1	51.9	52.9	51.9	57.5	57.1	54.0	55.2	54.5	55.7	55.6
3	57.5	58.2	57.1	54.1	54.9	57.9	55.6	57.7	57.5	58.6	57.1	55.0	58.2	56.3	56.6	57.7	58.3	58.9	58.8	56.8	56.5	57.2	58.1	55.9	53.5	55.2	56.6	56.8

#### March 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	54.6	54.0	59.0	51.3	50.9	54.0	52.9	55.1	53.7	56.7	51.6	57.6	68.9	56.1	53.0	53.1	53.7	54.6	52.6	53.7	57.1	60.9	63.6	61.5	66.5	56.2	56.4	57.3	56.1	56.8	59.5
3	58.1	56.8	56.3	55.9	55.2	59.1	57.4	58.9	60.6	57.3	56.7	57.9	61.6	57.1	57.8	59.5	57.6	56.1	56.8	59.3	57.2	57.9	59.5	59.1	57.8	55.6	56.6	58.0	58.8	58.7	59.4

### April 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	52.5	52.2	51.9	52.1	53.3	54.1	52.4	55.7	50.3	58.7	57.8	66.2	55.5	54.8	51.5	52.0	54.9	61.3	62.1	61.2	54.1	52.9	53.6	53.3	54.2	54.3	54.8	53.6	51.5	52.9
3	55.3	57.1	57.6	57.6	57.2	57.2	54.4	53.7	53.5	57.5	58.2	59.7	57.1	57.1	54.2	57.1	58.6	56.8	56.4	56.8	58.6	55.4	55.9	58.2	56.0	56.3	58.1	57.5	54.8	54.6

# May 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	52.8	53.8	56.0	55.7	55.6	52.4	54.6	53.5	54.5	55.9	55.0	58.2	53.3	52.7	54.8	55.6	52.9	55.4	62.0	60.3	60.9	60.2	52.7	53.9	55.0	56.6	54.5	54.9	61.1	58.8	57.4
3	56.1	57.0	56.9	58.0	59.0	56.2	55.8	58.4	57.8	57.2	57.5	57.5	56.4	56.5	55.7	55.5	58.6	57.7	56.7	55.7	58.9	57.9	57.8	56.0	58.5	58.7	57.9	54.8	55.5	56.5	57.5

### June 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	55.4	54.9	54.5	55.0	54.4	55.2	54.6	54.5	55.7	52.0	53.1	53.6	55.2	53.9	53.5	54.1	52.5	53.6	53.9	53.7	54.1	53.6	54.6	52.7	57.5	53.8	53.2	52.2	53.4	54.5
3	56.2	57.1	57.1	55.1	57.5	56.7	57.3	56.7	57.4	56.2	56.0	57.1	58.2	57.0	58.3	58.6	57.8	58.1	58.2	58.4	59.0	58.4	58.8	56.4	57.8	58.1	57.6	57.3	57.6	59.2

Farnborough Airport
Aircraft Noise By Day of Month and NMT
Start Date:01-Jan-2023

End Date: 30-Jun-2023

# January 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	43.2	47.0	48.2	48.4	46.7	48.4	48.9	49.3	47.6	47.4	49.5	49.0	50.8	48.8	49.6	50.9	49.3	46.9	48.5	50.8	50.9	48.5	49.8	50.2	48.1	51.7	49.8	45.3	45.4	46.6	47.6
3	50.8	57.2	58.2	56.4	54.1	57.5	56.3	55.2	56.5	55.9	55.0	56.4	55.5	55.5	54.1	55.6	53.7	55.8	53.7	57.7	51.9	52.7	53.1	53.9	56.9	54.5	55.4	51.7	51.9	54.5	55.4

### February 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1																												
2	47.7	48.7	47.4	47.6	48.1	47.6	46.2	44.1	49.7	48.1	51.5	49.6	49.1	43.6	46.4	46.9	48.5	50.3	49.1	45.7	48.6	49.0	52.7	51.4	49.6	51.1	52.3	51.8
3	55.3	56.3	55.2	51.4	53.1	56.2	52.8	55.4	55.6	56.7	56.1	53.3	57.0	54.3	54.2	55.8	56.8	57.5	57.9	54.6	54.7	55.6	56.7	53.4	50.2	53.6	54.7	54.6

#### March 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	52.2	50.7	49.9	48.6	47.8	47.3	49.0	53.1	49.0	51.3	47.9	48.9	58.1	48.2	49.4	48.4	51.1	52.0	50.0	48.0	48.3	46.5	53.7	52.0	56.0	53.4	49.0	51.5	48.5	48.0	50.5
3	57.0	55.0	54.6	54.8	53.9	57.6	55.7	57.5	59.2	55.2	54.9	56.3	58.7	55.2	55.7	58.2	55.7	54.2	55.6	55.7	54.4	54.9	57.3	56.8	55.6	54.0	55.2	55.3	56.9	56.5	56.6

### April 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	49.9	49.7	49.1	49.0	50.5	50.1	48.0	46.8	47.0	46.3	48.1	53.1	48.5	52.2	47.9	48.2	53.1	53.1	54.6	54.9	51.8	49.9	51.6	50.4	52.3	50.5	52.8	50.2	48.2	50.8
3	53.5	56.1	54.0	55.9	55.8	55.4	52.1	51.3	51.4	55.2	55.7	57.7	55.3	54.2	52.1	56.2	57.6	54.8	53.9	54.8	57.6	53.7	54.1	56.7	54.4	54.3	55.9	55.7	53.2	52.3

# May 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	50.1	52.4	52.8	51.5	52.9	49.8	52.8	49.2	51.0	52.0	52.3	53.9	50.4	50.4	51.6	51.3	48.7	52.5	52.8	53.8	54.1	54.4	50.6	51.9	53.7	54.2	51.3	49.8	56.1	52.8	52.9
3	54.9	55.6	54.7	56.7	57.7	54.2	54.0	57.4	56.3	55.4	56.1	56.0	55.4	55.5	54.1	53.7	54.3	56.7	55.4	54.6	58.4	57.1	56.7	54.8	57.7	57.8	57.3	53.3	53.9	54.9	56.6

### June 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	52.8	52.0	52.3	53.7	52.9	52.4	53.2	52.4	52.6	50.2	51.3	51.9	52.3	52.5	52.0	52.4	50.0	52.2	50.9	50.2	51.9	52.1	52.9	50.7	53.6	50.3	50.7	47.8	51.2	49.4
3	55.0	56.1	56.3	53.7	56.3	55.3	56.2	55.4	56.4	55.3	55.2	56.3	57.2	55.9	57.6	57.9	57.3	57.6	57.0	57.2	58.1	57.8	58.0	55.6	56.8	56.7	56.5	56.1	56.8	58.2

# Farnborough Airport

**Community Noise By Day of Month and NMT** 

Start Date:01-Jan-2023

End Date: 30-Jun-2023

# January 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	52.2	49.5	59.2	60.4	55.4	53.9	58.5	52.4	59.2	60.0	60.5	61.8	67.4	63.8	57.5	55.7	53.1	52.6	51.5	52.2	49.7	49.6	51.0	49.4	51.7	50.7	50.4	48.6	51.6	51.8	56.3
3	50.8	51.9	55.7	55.8	53.8	53.8	55.2	54.0	56.7	56.5	56.2	56.0	55.7	55.5	52.3	52.9	53.0	55.0	53.7	52.9	52.8	52.6	52.9	52.6	53.6	52.5	52.2	49.7	51.3	56.1	53.2

### February 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1																												
2	57.3	58.1	52.6	49.3	47.4	50.5	49.9	52.0	51.9	50.7	48.5	47.3	48.6	49.6	51.3	51.7	58.1	58.7	48.7	52.0	49.1	57.7	55.5	50.4	54.0	52.0	53.2	53.3
3	53.4	53.8	52.6	50.6	50.1	52.9	52.3	53.8	52.8	54.0	50.4	49.9	51.7	51.8	53.0	52.8	53.1	53.0	51.4	52.7	51.6	52.1	52.5	52.2	50.6	49.9	52.0	52.7

#### March 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	51.0	51.4	58.5	47.8	48.0	53.1	50.7	50.8	51.9	55.4	49.1	57.2	69.0	55.4	50.5	51.4	50.2	51.2	49.0	52.3	56.7	61.0	63.5	61.2	66.5	53.1	55.5	56.2	55.5	56.4	59.3
3	51.8	52.0	51.2	49.2	49.1	53.6	52.2	53.5	54.8	53.0	52.1	52.8	58.6	52.6	53.6	53.8	52.9	51.5	50.4	56.9	53.9	54.7	55.6	55.2	53.7	50.5	51.0	54.6	54.2	54.5	56.2

### April 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	49.0	48.6	48.7	49.1	50.0	51.9	50.4	55.4	47.6	58.7	57.6	66.4	54.7	51.4	49.0	49.7	50.1	60.9	61.5	60.3	50.2	49.9	49.2	50.1	49.7	52.0	50.6	50.9	48.7	48.7
3	50.6	49.8	55.1	52.6	51.7	52.5	50.3	49.9	49.2	53.5	54.5	55.5	52.5	53.9	49.9	50.1	51.5	52.2	52.8	52.2	51.6	50.5	51.2	52.9	51.1	52.1	54.2	52.6	49.7	50.6

# May 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																															
2	49.5	48.2	53.2	53.7	52.4	48.9	50.0	51.6	51.9	53.7	51.8	56.4	50.2	48.8	52.0	53.7	50.9	52.3	62.3	60.0	60.8	59.6	48.5	49.4	49.0	52.9	51.7	53.5	59.7	57.7	55.7
3	49.4	51.0	52.8	52.2	52.8	51.8	51.1	51.4	52.4	52.3	51.8	52.0	49.3	49.4	50.7	50.7	56.6	50.3	50.4	49.3	49.1	50.5	51.1	50.0	50.3	50.8	49.0	49.0	50.4	51.5	50.5

### June 2023

NMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2	51.9	51.9	50.6	49.2	49.3	52.0	49.0	50.2	52.9	47.1	48.3	48.7	52.1	48.1	47.9	48.9	48.8	48.3	50.9	51.2	50.2	48.1	49.7	48.4	55.5	51.4	49.6	50.3	49.4	53.1
3	50.1	50.1	49.1	49.4	51.2	50.8	50.5	50.5	50.5	48.5	47.9	49.4	50.9	50.2	49.6	49.6	48.2	48.4	51.9	52.0	51.2	49.7	50.8	48.8	51.1	52.2	51.0	51.0	49.8	52.1