NATS Major Incident Preliminary Investigation Report

NAS Incident 08 September 2026

Report date: 16 September 2026

1. Foreword

The failure of our flight data system on Tuesday, 8 September 2026 caused significant disruption to airlines, airports and the travelling public. I would like to apologise for the challenges it presented to the wider aviation system, to those whose travel plans were affected and to those who have worked tirelessly to recover normal operations across the industry.

Our full investigation into the circumstances is under way and our major incident report will be completed within 60 days. At this early stage, however, I can confirm that this incident is not related to either the 2023 NATS FPRSA system failure or the radar issue in July last year. I can also confirm that it was a software issue and not caused by any incorrect actions by either military or civil operators.

The NATS near-term traffic forecast from August 2026 indicated that NATS expected to handle around 8,000 flights on 8 September. Latest EUROCONTROL records show that we handled 6,094 illustrating that the incident led to disruption involving more than 2,000 flights being delayed, cancelled or diverted.

Our primary focus, and the primary accountability under our licence, is the safety of all air traffic using UK airspace. We will always do what is necessary to preserve that. That can mean placing restrictions to limit air traffic, as we did on 8 September; we do not do that lightly, and we deeply regret the inconvenience it caused to so many people.

This preliminary report for the Secretary of State for Transport and CAA sets out what caused the failure on 8 September and the measures we have put in place to rectify it. Our subsequent Major Investigation report due within 60 days will examine root causes, our response, and identify where lessons can be learned so that we can continually improve the critical service we provide to UK aviation.

Martin Rolfe
Chief Executive Officer

2. Executive Summary

NATS (En Route) PLC (NATS) operates under licence from the Civil Aviation Authority which includes obligations to prioritise and preserve safety during routine and exceptional operations. In a typical year, we handle more than 2.5 million flights travelling to, from and over the UK, and across the North Atlantic. Standard operating procedures along with controller and engineering training ensured that the incident on Tuesday 8 September was managed in a way that maintained the safety of all aircraft flying within UK airspace.

This preliminary report covers the actions and investigations undertaken in the 72 hours from the start of the incident to the last of 15 coordination calls with aviation stakeholders on Friday 11 September. Full investigation is ongoing and the Major Investigation report will expand on the themes identified here.

On 8 September 2026 at 13:25 the NATS CEO advised DfT and CAA senior officials that a major incident was underway at the London Area Control (LAC) centre which controls flights primarily operating above 24,500ft over England and Wales. Under NATS incident management arrangements the first aviation industry coordination call was held at 13:40 to brief airlines, airports, and other aviation stakeholders.

Air traffic controllers in the LAC centre had lost access to some live flight data because of a technical issue within the National Airspace System (NAS) and had invoked practised fallback procedures. This included coordinating the handover of aircraft between neighbouring national and international air traffic control units manually, a task that usually happens automatically. As this increased controller workload, the number of aircraft permitted to fly in the airspace was reduced to maintain safety margins. Restrictions were applied to reduce the number of aircraft that could enter each controller's sector, including limiting or stopping departures from UK and overseas airports. With the number of arriving aircraft exceeding the numbers departing, eventually increased ground congestion at airports led to invoking established procedures for the diversion of inbound aircraft already airborne. At all times controllers could speak with aircraft and monitor them on radar.

Engineers identified that the connection between the LAC system and the NAS had been dropped as a result of a significant error in processing flight data. This inbuilt functionality is one of many layers of resilience in the overall air traffic control system designed to localise significant issues when detected.

Once the issue was understood, it was resolved under pre-defined, controlled conditions while continuing to deliver a limited air traffic service.

Analysis has identified that flight data within the NAS had corrupted because of a legacy and previously unknown software defect and a combination of very specific events occurring simultaneously. There is no evidence at this stage to suggest that this incident was caused by a malicious actor or cyber related activity. A mitigation plan is currently in place while the permanent fix of the underlying software, which has already been developed and delivered by our supplier, is tested, safety assured and deployed.

The full scale of disruption will take time to confirm; but at this stage more than two thousand flights were delayed, cancelled or diverted. NATS handled some 1,800 fewer flights than forecast over the course of the day but we appreciate that does not reflect the full scale of the disruption experienced.

3. Scope of this Report

This preliminary report details the actions and activities undertaken from the initial incident up to the final situational call with customers on Friday 11 September. The scope of this report is to:

1) Establish the cause of the system failure.
2) Detail the chronology of the incident from initial occurrence through detection, escalation, investigation, closure and post-event actions.
3) Evaluate the impact on Air Traffic Control (ATC) and engineering operations, including the scale and duration of operational disruption.
4) Review the resilience and recovery measures.

Due to the impact and disruption caused, the events of 8 September have been categorised as a Major Incident and are being investigated under our Major Incident Process. The scope of the Major Incident Investigation is contained in section 10.

4. Definitions and Technical Context

These terms are defined here as they are used throughout the remainder of the report.

London Area Control (LAC)

London Area Control (LAC) ensures the safe and efficient routing of aircraft primarily operating above 24,500 ft, over England and Wales and handles around 6,500 flights on a typical September day.

National Airspace System (NAS)

The National Airspace System (NAS) is the core flight data system that underpins many of the air traffic control systems used in NATS domestic control centres, including LAC. Data in the NAS also supports systems at several UK airports and external ATC centres. It maintains flight plans and flight data, processes amendments and controller inputs, allocates and manages discrete aircraft identification codes (squawks), and associates flight plans with radar tracks.

LAC System

The hardware and software platform used to manage air traffic within London Area Control. The system receives data from the NAS and provides tools that enable air traffic controllers to make timely and informed decisions in order to safely and efficiently maintain aircraft operations within UK airspace.

Airspace sector

A sector is a subdivision of controlled airspace within which a controller is responsible for providing air traffic services to aircraft operating in that volume of airspace.

Airspace restrictions

Airspace restrictions take a variety of different forms but are intended to ensure that the number of aircraft passing through a sector, or arriving at an airport, do not exceed the number that can be safely handled at one time.

Squawk code

A code transmitted (squawked) by an aircraft that enables it to be identified by air traffic control systems.

Bronze Command team

Part of incident management response, the Bronze Command team is primarily composed of engineers that focus on resolving the technical issue.

Silver Command team

Part of incident management response, the Silver Command team is primarily composed of operational staff that focus on safely managing the ATC operation during the loss of any part of the underlying technical system. Their priority is to run a safe operation as close as practicable to normal service.

Major Incident Manager

The Major Incident Manager (MIM) focuses on resolution of the incident. They ensure the right people are engaged, keep senior commanders informed, manage escalation and communications, and maintain an overall view of the incident so that technical specialists can focus on restoring the service safely and efficiently. During an incident the MIM will lead an Incident Management team comprising of technical experts and senior leaders.

Gold Command team

Part of incident management response, the Gold Command team is primarily composed of members of the Executive and senior managers within the business. Their priority is to maintain a strategic focus and coordinate incident management responses from the Silver Team and other relevant sources to ensure that an accurate common operating picture is maintained and that key decision making is effective.

Air Traffic Incident Co-ordination and Communication Cell (ATICCC)

Part of incident management arrangements, ATICCC actively communicates with industry stakeholders during significant operational or technical incidents ensuring that all stakeholders get the same information at the same time. Regular briefing calls are held throughout an incident with airlines and other airspace users, airports, neighbouring air traffic control providers, and government organisations. ATICCC coordinates closely with the NATS Bronze, Silver and Gold command structure. ATICCC calls are followed up with email and SMS to all invited participants which number around 750 stakeholders across the aviation industry.

5. High Level Timeline

A preliminary high level timeline is included here to indicate key events and response activities. Reported times are subject to change following the Major Incident Investigation. The engineering and ATC responses are expanded in subsequent sections.

Tuesday 08 September 2026

From 10:00 to 12:32 all activity described below is routine engineering service management with *post event analysis*. For clarity, during this period there were no indications of underlying data corruption, or problems that would later stem from it.

10:00	A request for a squawk code to be allocated to a valid flight plan is made correctly. *Unknown at the time, the latent software defect and timing issue results in corrupted flight data within the NAS. More detail on this is provided in section 6.*
10:02	Controllers and system engineers receive a system error notification that the link between the LAC system and the NAS has dropped. The notification disappears after 45 seconds indicating that the link has been successfully re-established. *Unknown at the time, the LAC system dropped the link due to its attempt to process the corrupted flight data taking too long. A timeout on this enabled the system to automatically reestablish the link and continue. More detail on this is provided in section 6.*
10:06	A standard engineering incident is raised in the Service Management Command Centre (SMCC) reporting the link failure. It notes that although the failure has been detected, the system has recovered and is stable with no ongoing operational impact.
10:06 – 12:32	In response to the reported engineering incident, health checks are carried out on infrastructure with no evidence found of any hardware fault. Early analysis suggests that the link was dropped by the LAC system following timeout conditions. The event is referred to the relevant onsite specialist NATS engineering teams for further investigation. Investigations start to explore whether the issue is related to the processing of a specific piece of flight data, and analysis of the wider system data.
12:32	***Start of Major Incident***
12:32	The link between the LAC system and the NAS is automatically dropped and the LAC system enters a period of link instability where the drops are happening more frequently as the system attempts to resolve the issue. This is the first indication of the issue to controllers. *Unknown at the time, the link is being dropped as designed due to unsuccessful attempts to process flight data that are then timing out.*

12:32 – 13:32	Further warning notifications about link failures are presented to controllers and engineers. Some automation is no longer available to controllers requiring them to undertake some tasks manually.
12:35	NATS Bronze team activated as per standard incident management procedures.
12:45	The Duty LAC Operations Supervisor applies restrictions that limit the number of aircraft into certain sectors to allow them to operate safely under fallback arrangements, due to the necessity of manual tasks which take longer than the automatic operation. Departures from UK airfields are temporarily stopped to ensure sector limits are not exceeded by the addition of new flights to those already airborne and either already within UK airspace, or destined for it. All airlines and airport operational stakeholders are notified via the EUROCONTROL portal. The incident is notified to the duty Major Incident Manager. ***12:45 marks the moment from which effects start to directly impact airlines, airports, and the travelling public.***
12:49	NATS Silver team activated as per standard incident management procedures.
12:53	Engineering teams contact the supplier that maintains the software and request additional specialist support. Correlation between updates to flight data and link instability is investigated.
13:00	Major Incident Management team initial call.
13:08	NATS Gold team activated as per standard incident management procedures.
13:12 – 13:30	Airlines, airports and aviation stakeholders notified of upcoming ATICCC call scheduled for 13:40.
13:20 – 13:25	DfT and CAA senior officials are advised of a major incident.
13:32	The connection between the LAC system and the NAS is automatically dropped and does not recover. Controllers switch to standard, practised fallback procedures.
13:38	Further airspace restrictions are agreed that aim to restrict as far as possible the number of aircraft that can enter sectors controlled by LAC to 30 per hour. In addition to the stop on UK departures, restrictions are placed on the number of arrivals that some UK airports can receive which limits the number of UK destined aircraft departing from foreign airports. This information is updated in the EUROCONTROL portal.
13:40	First ATICCC call. Airlines, airports and other aviation stakeholders are advised of a major incident and that traffic restrictions are in place. Call has around 60 attendees and notes are circulated to around 750 aviation stakeholders shortly afterwards.
13:45	Engineers and MIM determine that the most likely cause is an issue within the NAS and the optimum recovery strategy is a controlled restart followed by a reload of

	flight data from the LAC system. Although this is a standard and documented recovery procedure, it has wider implications because the NAS provides flight data services to multiple national and international ATC units and airports and a restart of the NAS will require significant pre-planning and coordination.
13:50 – 14:50	Engineering teams confirm that the issue is within the NAS and system recovery plans are reviewed, assessed for safety, and approved. Engineers finalise preparation activities to restart the NAS. Additional airspace restrictions are applied to further reduce traffic levels and minimise the number of airborne aircraft within UK airspace during the restart process. Restrictions are advised to airlines and airports via the EUROCONTROL portal.
14:30	Second ATICCC call. Stakeholders are briefed that the technical situation is ongoing and advised of the traffic restrictions in place within the airspace and at airports. Call has around 114 attendees and notes of the call are circulated to around 750 aviation stakeholders afterwards.
14:50	Operational readiness is given for the NAS restart to commence.
14:50 – 15:17	Silver Command review approach, the restart plans, and give approval for the NAS restart.
15:17 – 16:09	The NAS is restarted and flight data loaded from the LAC system. This complex task is expected to take some time.
15:20	Some airports are experiencing ground congestion caused by the number of arriving aircraft exceeding the numbers departing. In response, established procedures for the diversion of inbound aircraft are invoked.
16:00	Third ATICCC call. Stakeholders are briefed that engineers are implementing a fix and once that is complete the system will need to stabilise. Update provided on the traffic restrictions and diversions in place within the airspace and at airports. Call has around 230 attendees and notes of the call are circulated to around 750 aviation stakeholders afterwards.
16:09 – 18:50	With the NAS successfully restarted, recovery activities focus on reconciling data that has become unsynchronised while the LAC system and the NAS were disconnected. This includes resolving duplicate flight plans, correcting aircraft code and callsign correlation anomalies, and addressing inconsistencies created by new and amended flight plans submitted during the period of traffic restrictions. The introduction of flight plan information is controlled and managed to ensure accuracy and that cross-system data reconciliation is happening correctly. As confidence increases, automatic processing is gradually reintroduced.
17:37	CAA notifies stakeholders that the National Airspace Crisis Management Executive (NACME) is being activated and convenes a meeting at 19:30.
18:00	Fourth ATICCC call. Stakeholders are briefed that engineers have fixed the issue and processing is returning to normal albeit slower than initially expected. Traffic

	restrictions are being gradually lifted. Airlines agree to help our restoration activities by updating their flight plans. Call has around 257 attendees and notes of the call are circulated to around 750 aviation stakeholders afterwards.
18:50	Data reconciliation across systems is complete allowing ATC operations to be fully restored. Airspace restrictions, departure stops, and diversion procedures are incrementally lifted as systems and ATC operations return to normal.
19:30	All airspace restrictions lifted.
20:00	Fifth ATICCC call. Stakeholders are advised that the technical incident has been resolved and that airspace restrictions have been removed.
22:30	Sixth ATICCC call. Stakeholders advised that tomorrow's ATC operation will run at normal capacity to support airline recovery from the significant disruption caused by the incident.

Wednesday 09 September 2026

03:00 05:00 10:00 13:00 16:00 21:30	Six ATICCC calls throughout the day. Primary focus is to support airlines and airports in recovering operations.

Thursday 10 September 2026

08:30 16:00	Two ATICCC calls. Primary focus is to support airlines and airports in recovering operations.

Friday 11 September 2026

08:30	Final ATICCC call held with airlines, airports and other industry stakeholders. Attendees agree no further calls are necessary.

Regular Bronze, Silver and Gold Command meetings were held under incident management arrangements throughout. For ease of readability, these are not included in the timeline above.

6. Technical Causes

The preliminary investigation has determined that the incident was caused by a legacy and previously unknown defect in a software module within the NAS which processes requests for the allocation or reassignment of squawk codes. A squawk code is an identification code transmitted (squawked) by the aircraft during flight, enabling air traffic control systems to match the aircraft's altitude, speed and direction with its intended flight plan so that flight progress can be monitored.

The incident was triggered by a valid manual request for a squawk code. This manual request was made correctly and there was nothing abnormal or invalid about the associated flight plan.

While this request was being processed, the NAS received a message for a higher priority activity to be undertaken which resulted in the squawk code allocation being paused while the system processed the higher priority message. Switching between different activities in response to prioritised requests is a normal function of the system; however, when the processing of the squawk allocation request resumed, the software defect meant it did not resume correctly and the resulting output was corrupted.

The reason this scenario has not occurred before is because:

1. The defect existed in a specific subsection of code within a software module, with an exposure window estimated as approximately one millisecond.
2. For the fault to occur, a higher-priority request had to arrive during that exact millisecond while the original request was part-way through updating a value.
3. Had the higher-priority request arrived even one millisecond earlier or later, the update would have completed normally.

Post-incident investigation has identified that when processing of the squawk allocation request resumed, the data associated with it had been corrupted and affected some subsequent flight data updates.

The issue presented itself to users when subsequent system processing tried to access some of the corrupted flight data. Unable to successfully process the data due to it being corrupted, the system within LAC alerted controllers to a loss of connection to the NAS until after the attempt at processing timed out. As requests to process corrupted flight data increased, controllers were presented with increasingly frequent notifications about loss of connection which the LAC system continued to recover automatically until it reached a point at which it was no longer able to. As designed, therefore, the link to the NAS was automatically dropped to protect the integrity of both systems.

Following restoration of the NAS, unsynchronised flight data and associated database inconsistencies required further engineering intervention across a number of connected systems. Recovery activities focused on reconciling flight plan data, resolving duplicate records, and correcting code and callsign correlation anomalies to ensure a consistent operational picture across all connected systems. These activities were completed by 18:50, at which point all systems had returned to stable operation allowing operational recovery to begin.

Investigations are ongoing as to the precise millisecond-timing involved in the very specific interactions encountered in the original squawk allocation request. Further detail will be included in our Major Investigation report. In parallel to the software fix, additional investigation will look at whether there were any other circumstances present within the wider system that increased the probability of the defect being triggered.

7. ATC Response

The first indication of the issue was notified to controllers on the radar displays in the LAC operations room which advised that the link to the NAS had been lost. The connection recovered automatically after approximately 45 seconds and the system remained stable.

When subsequent notifications were presented and persisted, the LAC operation commenced standard fallback procedures including manual coordination with adjacent air traffic centres.

Standard documented procedures categorise the loss of connectivity to the NAS as a '*Major Impact to Operations Room*' and advise that severe traffic flow restrictions could be required to maintain safe operations. During the incident this included applying restrictions to limit the number of aircraft that could enter certain sectors, restrictions to the number of aircraft that could enter the entirety of LAC managed airspace and stopping departures from UK airports. It also required restrictions on how many arrivals some UK airports could receive, thus stopping a number of departures from foreign airports. Airspace restrictions were also applied at other NATS operational units to manage traffic levels and facilitate recovery.

This combination of restrictions delivered the intended effect of reducing the number of airborne aircraft, particularly in the period prior to the NAS being restarted.

With the number of arriving aircraft exceeding the numbers departing, increased ground congestion at airports led to established procedures being invoked to divert inbound aircraft already airborne away from affected airports.

The stop on UK departures was lifted at times, when safe to do so, during the incident resulting in a total airport departures stop time of around four and a half hours over a six-hour period. All airspace traffic restrictions were lifted at 19:30.

The Major Investigation will review measures taken to manage traffic levels during the incident to understand the effectiveness for the future.

All aircraft stayed safely separated throughout the incident. Safety margins were maintained at all times. Standard procedures, together with controller and engineering training, meant air traffic operations remained safe throughout.

Operational preparedness

Operational procedures are specified within each operational unit's Manual of Air Traffic Services. The fallback procedures specifically relating to loss of the link to the NAS were followed.

Additionally, air traffic controllers undertake annual refresher training on how to deal with unusual circumstances and emergencies, which includes refamiliarisation with fallback procedures. Every year this includes simulation of different system failures and fallbacks, and in the refresher training for 2025/2026, the syllabus included the response to a link failure between the LAC system and the NAS.

8. Incident Management and Stakeholder Communications

NATS has Incident Management procedures in accordance with the NERL Resilience Plan that utilise a Bronze, Silver, and Gold command hierarchy, and an Air Traffic Incident Co-ordination and Communication Cell (ATICCC) which holds regular briefing calls throughout an incident with airlines, airports and other airspace users and stakeholders ensuring that all stakeholders get the same information at the same time.

The Major Incident Manager (MIM) along with the Major Incident Management team ensured a coordinated response and recovery effort. The MIM role was established in line with a recommendation made following the 2023 incident.

Bronze and Silver teams remained active throughout the duration of the incident and Gold remained active after the event and remains active at the time of writing this report. ATICCC calls were held until Friday 11 September, at which point they were stood down in agreement with airlines, airports and other airspace users.

Following previous incidents, a number of recommendations were made in relation to incident management both by internal investigations and a CAA independent review. These recommendations have been implemented, independently verified by the CAA, and amongst other actions, the dedicated Major Incident Manager and improved Incident Management arrangements were deployed during the incident.

A review of the effectiveness of the application of the incident management command and control mechanisms is included within the terms of reference of the Major Investigation report as outlined in section 10.

9. Resolution and Short Term Mitigations

Resolution

The defect within the NAS software has been identified and the software fix has been delivered and is currently under test. We have put in place robust mitigations to minimise any risk of a reoccurrence during the testing phase as set out in the next paragraph. In line with established change processes the permanent fix will be deployed as soon as the testing is complete. This will ensure the deployment is assured to maintain confidence in service stability and operational safety.

Short term mitigation measures

Incidents not previously encountered by their nature take longer to identify and resolve. Following the incident we now understand the events that caused the issue and an additional engineering framework is in place to manage any link-drop events between the LAC system and the NAS. Defined reporting arrangements will ensure that any suspected link failures continue to be identified and escalated, with operational teams being informed of the recovery actions so that any temporary system indications are understood and managed effectively. In the unlikely event of reoccurrence, a faster recovery can now be implemented to restore service and reduce the duration of system instability, minimising operational disruption and improving overall resilience.

10. Next Steps

The findings in this interim report are based on the information currently available with the aim of balancing the depth of investigation with a timely report. The Major Incident Investigation may lead to amendments of this Preliminary Report.

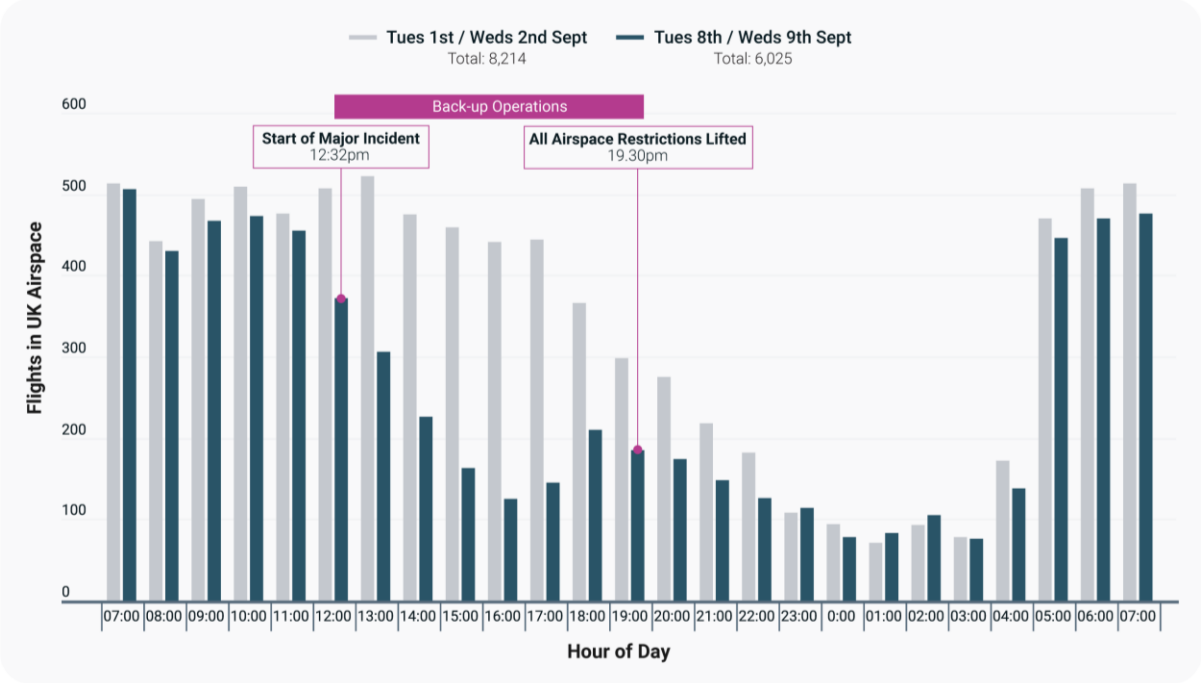
In addition to the short and longer term preventive measures detailed in the previous section, a full Major Incident Investigation is underway which will publish a final report within 60 days of the date of the incident.

The terms of reference for that investigation and subsequent report are as follows:

1. Establish the underlying causes that led to the system failure.
2. Develop a detailed chronology from initial occurrence through detection, escalation, investigation, closure, and post-event actions.
3. Evaluate the impact on Air Traffic Control (ATC) and engineering operations, including the scale and duration of operational disruption.
4. Review the resilience and recovery measures and make recommendations to strengthen them including a review of the effectiveness of our command and control structure.
5. Assess the effectiveness, timeliness, and clarity of external communications with stakeholders, including EUROCONTROL, during the event.
6. Assess the effectiveness, clarity, completeness of existing operational instructions for this type of event, together with an assurance activity as to the deployment of these processes.
7. Review defect records, system health monitoring, change activity, reliability trends, and asset lifecycle management relating to the failed equipment.
8. Review the application of lessons learned and the effective implementation of recommendations from previous Major Incident Investigations that were, or which could have been, applied during this event.

Appendix A: Traffic Relative to Previous Week

The graph below shows the number of commercial aircraft flying in UK airspace (blue bars) between 0700 on the day of the incident and 0800 of the day after, relative to the same days and times the previous week (grey bars).



Appendix B: Glossary

ATC	Air Traffic Control
ATICCC	Air Traffic Incident Co-ordination and Communication Cell
CAA	Civil Aviation Authority
CEO	Chief Executive Officer
DfT	Department for Transport
EUROCONTROL	A pan-European, civil-military organisation dedicated to supporting European aviation
FPRSA	Flight Plan Reception Suite - Automated
LAC	London Area Control
MIM	Major Incident Manager
NACME	National Airspace Crisis Management Executive
NAS	National Airspace System
NERL	NATS (En Route) Limited
SMS	Short Message Service (text messaging)
SMCC	Service Management Command Centre