

Audit of Service Quality Regulation at Gatwick Airport Limited

October 2016

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It is the responsibility solely of Civil Aviation Authority management to ensure that there are adequate arrangements in place in relation to risk management, governance and control.



Documents

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Glossary

ACT	Aerodrome Congestion Term
AOC	Airline Operators Committee
ASQ	Airport Service Quality
ASS	Airline Service Standards
CAA	Civil Aviation Authority
CC	Competition Commission
CSS	Core Service Standards
CSS(R)	Core Service Standards
FEGP	Fixed Electrical Ground Power
GAL	Gatwick Airport Limited
HAL	Heathrow Airport Limited
IDAHO	Integrated Database for Air Handling Operations
OPM	Operational Performance Monitoring
QSM	Quality Service Metric
RfQ	Request for Quotation
SEG	Stand Entry Guidance
SQRB	Service Quality Rebate and Bonus Scheme

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1.	Background and scope
2.	Executive Summary
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1 Background and scope

1.1 Background

Heathrow Airport Limited (HAL) and Gatwick Airport Limited (GAL) are each subject to service quality regulation by which they issue rebates to airlines who pay the airport's aeronautical charges in situations where certain standards are not reached. These standards apply to a range of directly measurable elements that reflect the passenger experience at HAL and GAL.

In 2003, the Scheme of Standards and Rebates (the Scheme) was first introduced as part of the five-yearly regulatory reviews. It followed a public interest finding by the then Competition Commission (CC) that charges did not reflect differences in quality to the extent that would occur in a competitive market. In 2008, the Scheme was extended and modified following a further public interest finding by the CC in its 2007 report to the CAA.

For HAL, the legal basis for the Scheme are the conditions in HAL's economic licence, granted on 13 February 2014 under the Civil Aviation Act 2012 (CAA12). The Scheme is defined in greater detail in the CAA's recent (April 2014) Q6 regulatory decisions for Heathrow Airport.

For GAL, the legal basis is the conditions of GAL's economic licence granted on 13 February 2014 under CAA12. GAL's licence incorporates a number of commitments made by GAL on (amongst other things) price and service quality (the Commitments) which are set out in GAL's Conditions of Use. GAL's service quality regime incorporates the Core Service Standards (CSS) and Airline Service Standards (ASS), and is defined in Schedule 3, Appendix II of the Conditions of Use, forming part of the Commitments. The Airline Service Standards place obligations on

third parties (airlines), and thus are not conditions of the Licence. While the CAA has no powers to modify or enforce the Airline Service Standards, we have reviewed these standards as part of CAA's general monitoring obligations.

When the CAA conducted service quality audits in 2009 and 2010, both HAL and GAL were subject to very similar service quality regimes. Since Q6 began, in light of the changes to the form of regulation at Gatwick Airport, there has been a divergence of the service quality regime at Heathrow and Gatwick airports.

Under the CAA12, the CAA has a primary duty to further the interests of users of air transport services. On-going monitoring of airport services, in the form of periodic audits, is important to ensure that the service quality regulation in place continues to achieve its intended purposes and to safeguard the passenger interest. Therefore, Grant Thornton was engaged to conduct audits of service quality at both HAL and GAL on behalf of the CAA. The results of this audit will be used to assist in further development of service quality regimes at both HAL and GAL.

1.2 Scope

The objectives of this audit were as follows:

- To provide a transparent, independent assessment of whether performance against standards has been measured and reported as intended in the CAA's service quality regulation
- To assess whether best practice has been followed in the documentation of processes
- To review the accuracy and reliability of the calculation of bonuses (where applicable) and rebates, both under normal circumstances and when service quality exclusions apply
- To determine whether HAL's and GAL's interpretation of the licence conditions and the CAA's determination on HAL's service quality protocol are in line with the CAA's interpretation
- To provide objective, unbiased, reliable and robust information on which the CAA can base regulatory financial incentives.

In conducting our audit, we reviewed the key processes relating to the following service standards for GAL (which we evaluated on a sample basis in terms of testing):

Gatwick

- Conditions of Use 2015/16
- Core Service Standards (Version 5, December 2015)
- Airline Service Standards (Version 4, February 2015).

The following service elements were assessed as part of our audit:

Component	Service Element	Element Metric	Target Result
Passenger Satisfaction	Departure lounge seating availability	Moving annual total of 12 monthly QSM scores and is weighted by passenger numbers for country of destination/ origin and hour of day.	3.8
	Cleanliness		4
	Way finding		4.1
	Flight information		4.2
Security	Central passenger search	Queue time less than 5mins for 95% of core hours	95%
		Queue time less than 15mins for 98% of core hours	98%
		Day when single time slice is greater than 30 minutes (single event per day triggers rebate)	Single time slice
	Transfer passenger search	Queue time less than 10mins for 95% of core hours	95%
	Staff search (terminals and crew)	Queue time less than 5mins for 95% of core hours	95%
	External control posts search	Queue time less than 15mins for 95% of core hours Performance of the Northern Approach Security Gate.	95%
Passenger Operational and Airline Operational Elements	Jetties	99% availability during core hours	99%
	Fixed electrical ground power	99% availability during core hours	99%
	Passenger sensitive equipment (general)	99% availability during core hours	99%
	Passenger sensitive equipment (priority)	99% availability during core hours	99%
	Arrivals reclaim	99% availability during core hours	99%
	Outbound baggage	Calendar Month 99% of bags inputted at check-in at -40mins or greater before the published estimated time of departure will have first attempt to tip at or before -25mins published established time of departure during core hours	99%
		Each Day	97%

Component	Service Element	Element Metric	Target Result
		97% of bags inputted at check-in at -40mins or greater before the published estimated time of departure will have first attempt to tip at or before -25mins published estimated time of departure during core hours.	
	Inter-terminal shuttle system	99% of the time 1 shuttle (minimum 1 car) is available	99%
		97% of the time 2 shuttles (minimum 1 car each) are available	97%
	Stands	99% availability during core hours	99%
	Pier service	Moving average % of passengers' pier served for a rolling 12 month period.	95%
Airline Service Standards	Arrivals Bag Performance - First and Last Bag Times on Carousel	95% of large aircraft flights to have the last bag delivered within 50 minutes of on chocks time	95%
		95% of small and medium aircraft flights to have the last bag delivered within 35 minutes of on chocks time	95%

In addition to the above, we also assessed the Aerodrome Congestion Term (ACT), rebate calculations and publication requirements.

Our review included the detailed scope of work outlined above and included within the Civil Aviation Authority's Request for Quotation (RfQ) detailed under Appendix A only, and did not include any other areas. Specifically it did not include:

- Airline Service Standard check-in performance queue time element, as measurement of this element was being implemented at the time of our review and was not yet operational.

1.3 Limitations of Scope

Because of the inherent limitations of any internal control structure and the scope and resources limitations of any assurance activity, it is possible

that errors or irregularities may occur and not be detected. The matters raised in this report are only those which came to our attention during the course of performing our procedures and are not necessarily a comprehensive statement of all the weaknesses that exist or improvements that might be made.

Our work is performed on a sample basis; we cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and their responsibility to prevent and detect irregularities, including fraud.

Any projection of the evaluation of the control procedures to future periods is subject to the risk that the systems may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate. Recommendations and suggestions for improvement should be assessed by management for their full commercial impact before they are implemented.

We believe that the statements made in this report are accurate, but no warranty of completeness, accuracy, or reliability is given in relation to the statements and representations made by, and the information and documentation provided the CAA, HAL or GAL. We have not attempted to verify these sources independently unless otherwise noted within the report.

During the course of our work there specific testing limitations, as outlined in section two below.

1.4 Acknowledgement

We would like to take this opportunity to thank the people involved in for their co-operation during this review.

2 Executive summary

2.2 Gatwick Airport Limited

The following table summarises the key observations identified during our review against each of the audit requirements included in the Civil Aviation Authority's Request for Quotation. Key observations have been summarised separately by GAL. We have categorised the observations from our review into the following areas:

- Detailed findings – observations that have a direct, or potentially direct, impact on service performance scores, and associated rebates, reported by GAL
- Future considerations (service standard specific) – observations which relate to the content, and interpretation, of the service standards. This includes instances where the service standards are not clear, areas where the service standards could be updated, or issues regarding the interpretation of the service standard by GAL
- Future considerations (airline operational processes) – observations which relate to the way service performance is measured, quality assured and reported by GAL.

Key Themes

On the whole our audit (and targeted testing) identified that data is being mainly collated, analysed and accurately reported (based on scope of our testing) in line with the requirements outlined in the CSS Handbook and ASS. For context, it is important to acknowledge that the way the service standards regime is set up does allow for certain level of discretion and judgement on how measurements are undertaken in respect of each service standard.

Discussions with key stakeholders from GAL, the AOC and CAA during the course of this audit identified two connected key themes around strengthening the checks and balances and governance around the service standards regime:

- Opportunities to enhance the transparency of how service standards are being implemented, and calculations made.
- The Gatwick AOC currently comprises of two individuals, both working in a part time capacity. This limits the ability for the AOC to provide the depth of analysis and challenge to GAL that both they and the CAA, would desire. Consideration should be given to how the AOC can be supported to enhance the level of oversight they provide, and the possibility of broadening representation on this forum.

In addition, below we have also detailed some examples of potential improvements to the current CSS and ASS processes which could enable greater transparency:

- Introduction of guidance material (such as policies and procedures) to support key operational processes covered by CSS and ASS. This would enable greater understanding of these areas by the AOC.
- Enhancements to quality assurance checks conducted by GAL across the different service elements included in CSS and ASS.
- Providing further detail and/or clarification within the CSS Handbook regarding how the Standards are measured. For example, whether maze systems should be included as part of security queue times, and whether out of gauge bags should be included as part of the assessment of arrivals bag performance.
- Introduction of independent oversight of aerodrome congestion events which require judgement as to whether these are 'material' or not.

Our audit also identified a heavy reliance upon spreadsheets by GAL in the end-to-end service metric calculation and reporting process. GAL have commenced a project which aims to systemise as many of these processes as possible, minimising the need for manual intervention and manipulation of data as part of the reporting process. At the time of our audit, this project had only just been signed off, and a supplier was still being selected.

In addition, our audit identified a number of enhancements that GAL should consider to ensure that data is captured and adequately analysed to provide a suitable assessment on GAL's performance against CSS and ASS measures. Examples of these are noted below:

- Enhancements to the processes used by GAL to monitor and independently validate manual queue times recorded by GAL's outsourced third party, OCS. This includes the

completeness, and consistency, of recordkeeping by OCS.

- Increased coverage of QSM surveys to assess passenger satisfaction (i.e. offering QSM in other languages and the inclusion of half completed surveys in the monthly results).
- Enhancements to spreadsheet controls used in the calculation of the monthly CSS and ASS results. This includes password protection and the lockdown of key cells.

Our audit identified several minor variances between the reported service elements results and the supporting documentation in place to substantiate calculations. Minor variances were identified for the following service quality components:

- Inbound baggage
- Security queue times
- Asset availability

We have provided a number of recommendations for GAL's consideration aimed at enhancing the current operational procedures in place in order to minimise the possibility of errors when collating, analysing and presenting CSS and ASS results. Further we have provided a number of considerations with regard to the design of the CSS and ASS requirements for the consideration of the CAA, GAL and the AOC.

General Observations

During our audit, we identified some general observations which do not specifically relate to one or more of the Civil Aviation Authority's Request for Quotation areas. We have summarised these general observations below:

- Airline representation regarding CSS and ASS at GAL occurs through two appointed representatives who form the AOC forum. These two members both operate in a part time capacity, balancing this role with other operational activities. There is a risk this may impact the ability of the AOC to effectively scrutinise GAL service performance. Additionally, given the small number of representatives forming the AOC, there is a risk of pressure by GAL to pass certain decision and exemptions. We acknowledge however that the AOC does provide challenge over exemptions being sought, and have declined exemptions that have been brought to them for approval.
- Guidance material (such as policies and procedures) was not available in most instances to support key operational processes covered by the CSS Handbook and ASS. We understand that GAL are currently compiling additional guidance material, however this was not available at the time of our review.
- The GAL Finance Analyst provides a critical role in the calculation and publication of CSS and ASS service performance. Whilst other GAL Finance and operational staff are aware of some processes and activities the GAL Finance Analyst performs, we identified an overarching key person dependency risk. Additionally, as noted above, the key activities that the GAL Finance Analyst performs are not currently documented by way of guidance material or process notes.
- Our audit identified that GAL is heavily reliant upon the use of spreadsheets in calculating service performance scores. We identified that these spreadsheets could benefit from improved spreadsheet controls (such as the locking down of formula and password protection).
- Our audit identified inconsistencies regarding how data is being input and updated within key spreadsheets used for CSS calculations. In some instances, data was manually entered, whereas in other instances data is being linked to other spreadsheets. We identified that benefit could be obtained from systemisation of service performance calculations and reporting, which GAL is currently exploring through a systemisation project. Additionally, we identified that spreadsheets could benefit for additional consistency regarding how data is being input and collated.

Passenger Satisfaction	
Audit requirement Give an objective opinion on whether QSM has been consistently applied according to the licence over time and across terminals based on: - whether the current methodology and application is transparent - whether any changes to update the procedures are well documented with an audit trail and have not in the opinion of the Auditors materially affected the comparability of the results compared to the benchmarks set when the scheme was set up.	
Audit observation	Reference
The methodology for conducting the QSM is transparent in that there has been no changes to the QSM questions or design since 2003. Any changes to the methodology would need to be agreed between the AOC and GAL. Any changes to the questions or survey calculations would also need to be shared with ORC (third party who support GAL in calculating monthly QSM results). The QSM process has been consistently adopted across the audit period (January 2015 – December 2015). Considerations for the future Service standard specific - Whilst we understand the QSM questions included under CSS have been reviewed, there has been no substantive change since 2003. We acknowledge that reviews of the CSS metrics occurred in 2007/08 and 2012/13. Airport operational processes - We were unable to obtain any evidence of an independent review conducted on the preliminary results for QSM for quality assurance purposes.	Considerations for the future Service standard specific 7.1D Airport operational processes 7.2E

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Audit requirement

Review whether in the opinion of the Auditor the methodology and application of the QSM reasonably accord with best market practice and are sufficiently objective, unbiased, reliable and robust to be fit for the purpose of supporting elements of the SQRB scheme at Heathrow Airport and in the CSS(R) scheme at Gatwick Airport and if not how the QSM could be amended to make it appropriate, and in particular:

- whether sample sizes are statistically adequate to support results to the level of confidence required
- whether the survey questions and processes are well designed to obtain a high quality response taking into account the wide range of passengers involved e.g. UK originating/other end originating/connecting passengers; business/leisure etc., language and cultural differences; male/female
- whether the samples of passengers and weighting adequately reflect the overall mix of passengers
- to what extent any changes designed to overcome concerns about the methodology and application would adversely affect the benefits of consistency.

Audit observation	Reference
QSM survey quotas for departing passengers are set on a regular basis based on passenger destination trends. QSM survey questions have been designed to focus on key passenger experiences throughout both the North and South terminals. Surveyors target a wide range of passengers with differing demographics, in line with overall GAL passenger demographic. Our audit did however identify some considerations for the CAA and GAL going forward which could further enhance the coverage and transparency of QSM surveys. Considerations for the future Service standard specific - QSM surveys are only currently provided in English, there may be an opportunity to provide additional languages and access more feedback. - The current design of the QSM in the CSS Handbook does not include direct measurement, or setting of quotas, for the passenger transfer experience. - While we acknowledge that the scope of the current CSS regime was established following a process of constructive engagement; there is a number of elements of the wider passenger journey that are not currently considered within the QSM (for example, availability of baggage trolleys). - The current methodology for surveying departing passengers presents challenges to capturing passengers using lounges until the time of boarding the flight. The CSS Handbook should be updated to clearly state whether business passengers are within, or excluded, from the scope of QSM surveys. - It should be considered whether the current survey population (0.047% of passenger travelling through GAL) is representative, particularly in light of forecast future growth. We are not advocating an increase in sample in a way that has to be proportionately linked to the passenger numbers, just that there may be value in revisiting the number of passengers sampled. We acknowledge that due to the way statistical survey sampling is conducted, and how surveys are weighted, an increase in sample size may not provide greater insight. Airport operational processes - QSM surveys may not always be completed at the most ideal locations to capture the passenger experience at a point in time (i.e. the passenger's security experience is not captured until the passenger is at the departure gates which is well after the passenger has gone through areas such as security). - At present any QSM survey that is incomplete will not be included within the calculation of the overall QSM results for arrivals and departures. - Monitoring of actual surveys completed against target is conducted using a manual quota document, with the risk of calculation error. - Wifi functionality available on PDAs used to conduct surveys is not currently being utilised to upload completed surveys real-time. Furthermore, our walkthrough of the survey process identified one instance where a surveyor did not save the completed survey whilst they are with the passenger, potentially enabling survey results to be altered before these are saved. We acknowledge that this may have occurred as part of demonstrating how a survey is completed during the walkthrough phase of our audit. - Surveys are conducted by GAL staff on zero hour contracts. We acknowledge GAL has considered outsourcing, however this was rejected on the grounds of additional costs. There may be value in considering independent (outsourced) surveys to be requested at less frequent intervals (e.g. say every 2 or 5 year interval), to complement the surveys undertaken by GAL staff.	Considerations for the future Service standard specific 7.1C 7.1E – 7.1H Airport operational processes 7.2K – 7.2L 7.2N – 7.2P
Audit requirement Report on whether there are more effective, accurate or robust measures of service performance, including (where appropriate) suggesting proven systems that are used at other airports.	
Audit observation	Reference
N/A – Refer to analysis in other sections above	N/A

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Audit requirement

The audit shall also compare the results of the QSM to international surveys of airport quality performance (particularly the Airport Service Quality (ASQ) survey conducted by Airports Council International), and identify any apparent anomalies in movements over time and offer any possible explanations.

Audit observation

Reference

Our audit compared results from the QSM and the ASQ survey in 2015 to understand whether there was an apparent anomaly. We identified that these two surveys differ with regard to the questions asked, calculations applied, methodology used, use different scales and are therefore not directly comparable.

During 2015 there were variances in the results between the two surveys with the QSM survey results consistently higher than the ASQ. Below is a summary of the survey results which we note may not be directly comparable given the use of different methodology, calculations and scale.

Considerations for the future
Airport operational processes
7.2M

Measure	QSM (2015 average)	ASQ (2015 average)
Departure Lounge Seating	4.05	3.52
Cleanliness	4.08	4.04
Way finding	4.18	4.11
Flight Information	4.37	4.16

Security and Control Posts	
Audit requirement The audit shall focus on these security elements in the SQRB scheme at Heathrow Airport: Central search, Transfer search, Staff search, Control posts (CTA, Cargo, Eastside, Southside, Terminal 5). The audit shall focus on these security elements in the CSS (R) scheme at Gatwick Airport: Central passenger search, Transfer search, Staff search (Terminals and Crew), External control posts search. The robustness of the current queue measurement systems and procedures in each terminal and their fitness for purpose in providing the source data for the SQRB scheme at Heathrow Airport and in the CSS (R) scheme at Gatwick Airport, including within this assessment the questions that have been raised regarding the consistent measurement of the end of passenger security queues.	
Audit observation	Reference
Our audit identified that there is a mix of manual and automated processes being used to record security queue time. We encountered a number of difficulties independently verifying security queue times recorded by OCS against CCTV footage. Our review also identified a number of considerations for the future to further enhance the measurement of the queue times at GAL. Detailed findings - We identified opportunities for GAL to enhance the independent validation and monitoring processes used over the third party provider (OCS) who captures manual queue times. - OCS records of queue time were not available for all time segments we sampled, despite these falling within the core hours of the CSS Handbook. We note that these times were at the beginning and end of each day. While we understand from GAL that these may relate to instances where there were no passengers, this has not been noted on the queue time forms OCS retains. - Vehicles using the Northern Approach Gate are waiting in the road outside of the security area, creating longer queues at the external control gate. This impacts upon the security queue time recorded in this location. - Uni-queue systems used to manage the flow of passengers through the North Terminal general security area have been included as part of unimpeded transit time calculations during the period of North Terminal construction. This does not align with the CSS Handbook which requires these uni-queue systems to be avoided as part of unimpeded transit time calculations. - Five minor discrepancies were identified in reported security service metric scores between published information and information retained by GAL in supporting documentation. Considerations for the future Service standard specific - Premium security is currently included within the central security queue calculation which could lead to queue times being captured that are not representative of the average queue time per passenger across GAL. Airport operational processes - As part of our testing, we identified some issues regarding the availability and accuracy of a security monitoring tool used by GAL which could be used for quality assurance checks on security times. We acknowledge that the affected system is at the end of its life and we understand that this is being replaced in 2016 as part of GAL's capital investment programme. While this is an important issue and therefore we have highlighted this to GAL management, it is out of the scope of the service standards. Details of these issues have been provided to, and discussed with, GAL. However, due to the security implications associated with this observation, the specific details have not been presented in this report. - The process for calculating unimpeded transit time is based on the time taken for a member of the AOC to walk the transit area. This may not be representative of the walking speed of the average passenger. - Activities included as part of the general passenger security area (such as passport checks and preparation areas for screening) differ between	Detailed findings 6.1 6.3 – 6.5 6.7 Considerations for the future Service standard specific 7.1I Airport operational processes 7.2Q – 7.2Y

the North and South Terminals, impacting upon comparability. We acknowledge that this reflects a temporary location of security areas during construction in the North Terminal. - Real time monitoring of service elements during the month is only available for the general passenger security area in the South Terminal (which uses an automated system). GAL should consider additional real time monitoring of other service elements to enhance operational oversight. - A centralised system is not being used to record all security queue times, impacting upon central oversight by GAL. - We identified errors in the data entry of security queue times into calculation spreadsheets. We note that this did not impact upon the overall calculation of the service measure for the month, or rebate calculations. - However, as part of wider review and upgrade of CCTV functionality at GAL, consideration should be given to extending the use of CCTV footage to enable independent monitoring of security queue times and asset availability. The Information Commissioners Officer should be consulted regarding the use of CCTV for this purpose to ensure that this is aligned with their requirements.	
Audit requirement Whether the current grouping of control posts at Heathrow Airport is (i) balanced in terms of usage, (ii) reasonable in terms of substitutability of individual control posts, and (iii) able to maintain incentives on HAL to maintain control post performance levels across the campus in order to meet the operational needs of the airlines/passengers.	
Audit observation	Reference
N/A – HAL specific measure.	N/A
Audit requirement Whether there are more effective, accurate and robust measures of service performance, including (where appropriate) suggesting proven systems that are used at other airports.	
Audit observation	Reference
N/A – Refer to analysis in other sections above.	N/A

Passenger Operational and Airline Operational Elements	
Audit requirement The audit will consider the procedures and systems for measuring availability of the assets set out in the SQRB scheme at Heathrow Airport. This includes the following aspects: Passenger sensitive equipment (general), Passenger sensitive equipment (priority), Arrivals baggage carousels, Track transit system, Stands, Jetties, Fixed electrical ground power, Stand entry guidance, Pre-conditioned air, Pier-served stand usage. The audit will consider the procedures and systems for measuring availability of the assets set out in the CSS(R) scheme at Gatwick Airport. This includes the following aspects: Passenger sensitive equipment (general), Passenger sensitive equipment (priority), Arrivals reclaim, Inter-terminal shuttle system, Outbound baggage, Stands, Jetties, Pier service, Fixed electrical ground power. The audit shall give an objective opinion on: - whether the procedures and systems in each terminal are fit for purpose - whether they are transparent, well documented and have been consistently applied - whether the application of the processes by which specific assets are excluded from the scheme when service quality exclusions apply (e.g. planned maintenance) have been consistent with the specification in the SQRB scheme at Heathrow Airport and in the CSS(R) scheme at Gatwick Airport - whether there are more effective, accurate or robust measures of service performance in this area, including (where appropriate) suggesting proven systems that are used at other airports.	
Audit observation	Reference
GAL has established procedures to capture and calculate monthly asset downtime, and associated availability, for each asset class included within the CSS Handbook. The calculation methods used were inconsistent across different asset classes both in regards to availability calculations, and the capture of asset downtime/availability. A separate spreadsheet has been created for use in calculating availability for each asset class, again creating inconsistency in the approach adopted across the different asset types. All exemptions require documented approval from the AOC, evidenced through documented meeting minutes. Our audit identified minor errors in the calculation of asset downtime for stands. Furthermore, we identified minor discrepancies between CSS scores reported on the GAL website against supporting documentation and calculation models used by GAL. There are also further opportunities for GAL to enhance the recording and calculation of asset availability measures at GAL. Detailed findings - Our audit identified minor errors in the calculations used in the stand availability spreadsheets for March 2015 and July 2015. These calculation errors did not impact upon the rebate payable by GAL. - Our audit further identified a minor variance between the asset downtime as per the monthly supporting calculation and the downtime recorded within Maximo (GAL's asset management system). - Minor discrepancies were identified between reported asset availability data reported on the GAL website and supporting documentation retained by GAL. Considerations for the future Service standard specific - Exclusions are available for major refurbishment work, re-lifting work, major investment projects and replacements; however there is no definition as to what constitutes work of this nature. - Guidance in the CSS Handbook for inter-terminal shuttles is currently unclear and could be read as requiring no shuttle to be available outside of core hours. We acknowledge that GAL are not currently interpreting the CSS Handbook in this manner, but rather are ensuring one shuttle is available at all times.	Detailed findings 6.6 6.8 6.9 Considerations for the future Service standard specific 7.1J 7.1K Airport operational processes 7.2E 7.2Y – 7.2AC

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Airport operational processes

- Documentation to evidence that quality assurance checks are performed was not available for all asset types covered by the CSS Handbook. Furthermore, we identified opportunities to enhance the nature of quality assurance checks being performed by GAL.
- At present CCTV footage is not being used to substantiate asset availability and it is not the purpose of such a system.
- The majority of all assets downtime is captured via Maximo, however we identified that opportunity for further asset types to also be monitored via Maximo (for example, shuttle downtime is currently captured in a manual logbook and excel spreadsheet).
- Reports showing asset availability during CSS Handbook core hours (from Maximo) are not currently being prepared on a frequent basis to be used for operational management.
- The pier service model used by GAL is currently complex and requires several different data inputs and manipulations. We have identified opportunities for this to be simplified to reduce the risk of calculation error.
- There are currently two long standing pier service exemptions at GAL, which are obtained on a rolling basis from the AOC. Consideration should be given to incorporating these exemptions into the CSS Handbook to minimise administration time by GAL and the AOC.

Aerodrome Congestion	
Audit requirement The audit shall give an objective opinion on: - whether the data collection and communication have been performed subject to adequate processes and procedures to ensure that they are accurate and complete - whether the airport has reasonably identified the full list of "material events" as defined in the SQRB scheme at Heathrow Airport and in the CSS(R) scheme at Gatwick Airport - whether the airport has reasonably identified the full list of such events with a "material operational impact" as defined in the SQRB scheme at Heathrow Airport and in the CSS(R) scheme at Gatwick Airport - whether the airport has reasonably applied the "exceptions" as defined in the SQRB scheme at Heathrow Airport and in the CSS(R) scheme at Gatwick Airport.	
Audit observation	Reference
GAL maintains a Super Log which captures all potentially material events that occur each day. This Super Log is updated by the Airside Operations team as part of the roles and responsibilities of their shift and includes sufficient detail on the nature of any events. The CSS Handbook provides guidance on what is considered a 'material event' and 'material operational impact'. This guidance is referred to by the Airside Operations team as part of categorisation of all potentially material events. Whilst guidance is available in the CSS Handbook, categorisation of events requires judgement and we identified improvements to ensure that quality assurance checks are performed over this decision making. Considerations for the future Airport operational processes There is no independent review of quality assurance over the classification of events to assess whether these are 'material' in nature, and therefore fit the definition included within the aerodrome congestion term.	Airport operational processes 7.2E
Audit requirement Whether in the opinion of the Auditor the airport operator has: - made reasonable assumptions about the number of expected arrivals and/or departures during material events with a material operational impact - the airport operator has made reasonable judgements based upon explicit criteria where there have been contributing causes beyond its control.	
Audit observation	Reference
Aerodrome congestion is calculated using a spreadsheet which captures actual and expected arrivals and departures, extracted from the core GAL airport database. As noted above, we have identified improvements to ensure that quality assurance checks are performed over judgements made as part of aerodrome congestion decision making. Considerations for the future Airport operational processes There is no independent review or quality assurance over the classification of events to assess whether these are 'material' in nature, and therefore fit the definition included within the aerodrome congestion term.	Airport operational processes 7.2E

Audit requirement Whether subject to the above the rebates have been properly calculated.	
Audit observation	Reference
Refer to the rebates section below.	N/A
Audit requirement Whether there are more effective, accurate or robust measures of service performance, including (where appropriate) suggesting proven systems that are used at other airports.	
Audit observation	Reference
As noted above, independent review aerodrome congestion term decision making needs to be implemented by GAL. This should include oversight from the AOC.	Airport operational processes 7.2E
Audit requirement As part of the above assessment, the Auditors will investigate and report on the transparency of the decision-making process for the operation of this measure, and on the extent to which the views of stakeholders are appropriately captured and considered.	
Audit observation	Reference
Classification of events regarding aerodrome congestion are made by the Airside Operations team. We identified an opportunity to enhance visibility, and independent challenge of aerodrome congestion calculations through opening this decision-making process to a broader audience.	Airport operational processes 7.2AD
Considerations for the future Airport operational processes	
Regular reports and information on potentially material events are not provided by GAL to the AOC and CAA for their review and consideration.	

Airline Service Standards (Gatwick Airport only)	
Audit requirement The effectiveness of the monitoring of arrivals bag performance, in particular the robustness of data collection and calculation of airline performance.	
Audit observation	Reference
Airline bag performance is calculated based upon Ground Handler notification of aircraft arrival (on chocks time) and delivery of the last bag. We identified an automated data input of on chock time which could be used by GAL to reduce the possibility of manual data recording error. Our audit also identified a further area for clarification within the CSS Handbook to ensure consistent measurement of this performance measure. Detailed findings Our audit identified four minor discrepancies between published inbound baggage scores and supporting documentation retained by GAL. Furthermore, we were also unable to reconcile flight data from the inbound baggage service metric spreadsheet to the rebate calculation spreadsheet for four of five months. As a result, we were unable to obtain comfort over the accuracy of rebate calculations for these months. Considerations for the future Airline operational processes Quality assurance review of last bag time is not currently being undertaken, for example using CCTV footage. In addition, in chock time is automatically captured within a system as the aircraft arrives however, this automatic data feed is not currently being used as part of calculations.	Detailed findings 6.2 Considerations for the future Airport operational processes: 7.2E

Audit requirement	
The provision of adequate information to airlines and to the CAA on the amounts paid and the dates of payments.	
Audit observation	Reference
Service performance information (on both CSS and ASS performance measures) is provided to the CAA by way of reports published on the external GAL website, and through information provided to the AOC on a monthly basis. This information provides a summary of ASS performance for the month, including any targets that have not been met. Our audit identified that adequate information appears to be provided by GAL to the CAA regarding ASS performance.	N/A
Calculation and Payment of Bonuses (Heathrow Airport only) and Rebates	
Audit requirement	
The robustness of the calculations of bonuses (Heathrow Airport only) and rebates, including the consistent rounding of figures to the appropriate number of decimal points.	
Audit observation	Reference
Rebates are calculated using a spreadsheet which pulls in performance for each service element that month, broken down by terminal. Rebate calculation methodology applied by this spreadsheet appears to align with requirements per GAL's Conditions of Use and the Core Service Standards. An annual rebate wash-up calculation is conducted at year end to reflect variations between estimated and actual aerodrome charges and airline use. We identified that further training and awareness of this calculation would be beneficial. Considerations for the future Airport operational processes - There is a key person dependency regarding the annual rebate wash-up calculation. Whilst the GAL employee who conducted this wash-up in 2014 is still employed by GAL, their role no longer includes this activity and training has yet to be provided to the new GAL Finance Analyst. - Calculation of rebates does not reflect the mid-year reforecast of passenger numbers, impacting upon the accuracy of rebate calculations during the year.	Considerations for the future Airport operational processes: 7.2H 7.2J
Audit requirement	
The robustness of the calculations of rebate reduction due to airlines not meeting the airline service standards (Gatwick Airport only).	
Audit observation	Reference
Rebate calculations are based on monthly CSS performance of each service element. Where a CSS performance target has not been met, the GAL rebate calculation model will check whether each airline has achieved their ASS targets and will only pay a rebate if these ASS targets have been met. Our audit did not identify any areas for improvement regarding the robustness of calculations with regards to airline service standard reductions.	N/A

Audit requirement The provision of adequate information to airlines and to the CAA on the amounts of rebates paid by HAL and GAL, the bonuses earned by HAL, the amount of rebate reduction (Gatwick Airport only), and dates of payments.	
Audit observation	Reference
A summary of rebate exposure and rebates paid is presented on the GAL website. Published rebate information was not available for 2014/15 at the time of our audit, but was subsequently republished. We also identified areas where the type of rebate information reported by GAL on their website could be enhanced. Airlines are provided their rebate by way of a credit note with a high level description of the period and service element the rebate covers. As identified by GAL, there is a need to provide additional information to airlines to enhance their understanding of rebate calculations. Considerations for the future Airport operational processes - The format of rebate information presented on the GAL website varies between 2014/15 and 2015/16, with one year presented in table form and the other in paragraph form. In addition, published rebate information does not reflect any changes to the rebate exposure or rebates paid as a result of the annual rebate wash-up. - Details of how rebates have been calculated has not historically been provided to airlines with their rebate credit note. GAL intends to provide additional information to airlines going forward, however as rebates had not recently been paid at the time of our review we were unable to sight this.	Considerations for the future Airport operational processes: 7.2G 7.2I

Publication of Service Performance	
Audit requirement The audit shall give an objective opinion on the publication of performance, and (where appropriate) make suggestions for possible ways of improving transparency of information to passengers and other airlines.	
Audit observation	Reference
As part of our audit, we conducted testing over the accuracy and completeness of published service performance information on GAL's website. GAL publish monthly service performance reports of service performance. Information included in these service performance reports clearly sets out service performance for each GAL terminal, both for the month and 12 month period. However, we identified the following further areas which could enhance reporting on service performance. Considerations for the future Service standard specific: - Service performance reports had not been published for 2016 at the time of our audit fieldwork due to on-going consultation with the AOC. Furthermore, there was no timescale for service performance report publication in the CSS Handbook. Airport operational processes: - Quality assurance checks of service performance reports by GAL are not currently documented and therefore we were unable to assess these were being performed as part of our audit. - Updates to service performance reports on the GAL website are not clearly communicated to end users via an explanation on the website notifying them of the change and the nature of amendments made.	Considerations for the future Service standard specific: 7.1B Airport operational processes: 7.2E 7.2F

Limitations

During our work, we identified that CCTV footage was used by GAL for the purposes of passenger safety and security. As a result this impacted our ability to independently assess:

- The accuracy of start and finish times of work orders raised to record planned/routine maintenance and ad hoc/reactive maintenance for assets covered by the asset availability measures. This impacted our ability to independently assess whether asset downtime for each asset had been accurately recorded by engineers and contractors at Gatwick.
- The accuracy of manually recorded security queue times (for general security, transfers, staff, and external control posts) over the period January 2015 – December 2015. This impacted our ability to independently assess whether security queue times had been accurately recorded by OCS, the third party contracted by Gatwick to record security queues.
- The accuracy of automated security queue times (for general security) at Gatwick's South terminal. The automated security queue system applies a number of rules and calculations to determine the queue time that is recorded.

Furthermore, we were unable to verify asset availability against original system records due to limitations on the length of time system records are retained by GAL:

- The accuracy of start and finish times of asset downtime in the following systems as records are only retained for a period of 99 days:
 - SEGS ('on chock time' which is used as part of the inbound baggage performance measure)
 - IDAHO (used as part of the measurement of several asset types under the asset availability performance measure).

3 Summary of Key Findings

The following tables below provides a summary of the detailed findings ratings and considerations for the future for each service component for GAL.

Component	Detailed Findings			Future Considerations	
	High	Medium	Low	Service Standard Specific	Airline Operational Processes
General Observations	-	-	-	1	5
Passenger Satisfaction	-	-	-	6	6
Security & Control Posts	-	2	3	1	9
Passenger Operational & Airline Operational Elements	-	-	3	2	5
Aerodrome Congestion	-	-	-	-	1
Airline Service Standards(Gatwick only)	-	1	-	-	-
Calculation & Payment of Bonuses (Heathrow only) & Rebates	-	-	-	-	4
Publication of Service Performance	-	-	-	1	1
Total	-	3	6	11	31

Within our reports, every finding is given a rating providing a high level view of the adequacy of the internal control environment. These ratings are described in the tables below. This rating system allows for objective monitoring and comparison of reports and further provides indication to the level of control weaknesses in place. Whilst we have documented some of the key features below as a guide towards the rating provided this list is not comprehensive and other factors may have been taken into consideration. The below table provides example features which are considered when providing ratings to our findings throughout this report.

Finding rating	Description	Potential Rating Features	Service Standard Audit Commentary
High	Findings that are fundamental to the management of risk in the business area, representing a weakness in control that requires the immediate attention of management	- Key control not designed or operating effectively - Potential for fraud identified - Non-compliance with key procedures/ standards - Non-compliance with regulation	In the context of our audit, we typically identified that high priority findings were of a nature where controls were not designed appropriately and/or not working effectively in practice.
Medium	Important findings that are to be resolved by line management.	- Impact is contained within the department and compensating controls would detect errors - Possibility for fraud exists - Control failures identified but not in key controls - Non-compliance with procedures/ standards (but not resulting in key control failure)	In the context of our audit, we typically identified that medium priority findings were of a nature where enhancement were identified to the way controls had been designed and/or the way in which controls work in practice.
Low	Findings that identify non-compliance with established procedures or opportunities to further enhance the service quality framework.	- Minor control weakness - Minor non-compliance with procedures/ standards - Opportunities or observations surrounding the service quality framework	In the context of our audit, we typically identified that low priority findings were of a nature where observations for future enhancement were identified to the way controls had been designed and/or immaterial control weaknesses were identified.

4 Approach

4.1 Service element overview and walkthrough

We obtained an overview of how each service element operates at GAL. This involved meeting with key stakeholders responsible for the oversight and delivery of each service element. We also met with stakeholders at GAL who collated and published the service element results on a monthly basis.

During this process we conducted site visits to GAL and sighted key operational activities that supported the collation and analysis of data for the service element. We also obtained and reviewed key documentation relevant to each service element.

4.2 Audit procedures

Based upon our understanding of each service element, we developed an audit procedure specific to GAL. These audit procedures guided our testing approach in the following areas:

- Review of calculations, models and systems
- Validation of data inputs
- Reasonableness of calculations
- Recalculating rebate/bonus payments
- Publication of service standard results.

4.3 Review of calculations models and systems

We inspected the key Excel workbooks that are used for each service element calculation to assess the integrity of data and calculation methods used. This included an assessment of:

- Security controls in place to prevent unauthorised access or accidental modifications to the spreadsheet (e.g. password protection)
- Change controls in place to ensure modifications are appropriate and authorised (e.g. change logs)
- Formula accuracy, macro (automated routines) and external links assessment using a specialist Excel auditing tool called 'XL Audit'.

Furthermore, we have tested the methodology used by third parties to weight the QSM scores by passenger numbers by independently re-performing the weighting for a sample month and comparing to the outputs provided to the airport. This has been performed using our data analytics software, IDEA, by taking the raw passenger data and QSM survey inputs and transforming it using the algorithm rules.

4.4 Validation of data inputs

Applying a sample testing approach, we validated key data inputs for each service element. This validation included the review of:

- Maximo work orders raised for asset downtime
- CCTV footage for both security and control post queue times

- Material event documentation, to support aerodrome congestion calculations.

4.5 Accuracy of calculations

We reviewed key supporting calculation models and spreadsheets for each service element to assess whether these had been designed appropriately (in line with service quality requirements) and were operating effectively in practice. Testing in this area included activities such as:

- Tracing data inputs through from data input to the externally published service performance results – including where different spreadsheets are used as part of the service element calculation
- Testing key formulae within calculation models/spreadsheets to assess whether these are in line with the requirements of the service standard calculations
- Obtaining supporting documentation for any exemptions / exclusions, including evidence of approval from the AOC and other relevant parties.

4.6 Recalculation of rebate / bonus payments

As part of our review of the reasonableness of service element calculations, we took a sample based testing approach to recalculate a sample of rebate/bonus payments throughout of audit period. This included:

- Testing key formulae within rebate/bonus payments models/spreadsheets to check these are in line with requirements calculations within the service standards

- Testing to ensure rebates/bonuses have been calculated based on reported service quality results for the relevant period (including Airline Service Charges for GAL)
- High level review of annual rebate wash-up process.

4.7 Publication of service standard results

For each service element, we compared a sample of service element results across our testing period to published results of the external websites of GAL.

4.8 Comparison to good practice

Throughout our review, we considered the operational practices at GAL compared to other good practice we have observed elsewhere within the sector, similar organisations and other regulators.

5 Service Element Overview

Passenger satisfaction

Passenger satisfaction is measured via Quality of Service Monitor (QSM) surveys, which use a pre-defined set of questions to assess passenger satisfaction across the following elements:

- Departure lounge seating availability
- Cleanliness
- Way-finding
- Flight information.

Surveys are conducted by GAL staff using hand held devices. The surveys take place across both the North and South Terminals, in either a departure lounge for departure passengers, or within the arrivals concourse for arrivals passengers.

Survey quotas are prepared on a regular (usually monthly) basis to target passengers that are surveyed. Quotas include both the total number of passengers to be surveyed for the month, along with the destination they are travelling to (for surveys of departure passengers).

Completed surveys are downloaded to the GAL network at the end of each surveyor's shift. GAL Market Research staff review and spot check survey results during the month to ensure data quality. At month end, survey data is sent by GAL to a third party (ORC), who specialise in business intelligence. ORC apply a weighting factor to survey results to ensure results for the month reflect actual passenger numbers travelling through each terminal, and the percentage of passengers using particular services (such as toilets). Further weightings and calculations are applied based on flight destination, time and other agreed factors (including any approved exemptions).

Passenger satisfaction scores are presented for the month and on a moving annual total basis. Final scores are reviewed by the GAL Market Research team each month.

Security and control posts

GAL measures security queue times across both North and South terminals for:

- Central passenger search
- Flight connections
- Staff search
- External control posts (Northern approach gate).

Central passenger search

GAL is currently utilising two different approaches for measuring and monitoring central passenger search queues in the airport. Queue times are manually recorded by a third party (OCS) in the North Terminal, whereas an electronic system is used to monitor queue times in the South Terminal. We understand that GAL intend to roll out the electronic queue management system in the South Terminal as part of the current development works that are taking place.

GAL security conduct random checks of security queue times (on a weekly basis) to verify the accuracy of queue times recorded by OCS or via the automated queue management system.

North Terminal

Within the North Terminal, GAL have contracted a third party (OCS) to manually record security queue times during core hours. One passenger is selected at random each 15 minute period during core

hours as they enter the screening area. Queue timing commences when the passenger enters the security area, or another point as agreed by the AOC. The OCS queue timer continues to manually record the queue time until the passenger reaches the start of a roller bed, and are in a position to retrieve a tray to place their belongings in for security screening.

OCS staff record queue times on a manual document and call these through to the GAL Control Centre every 15 minutes. The GAL Control Centre are responsible for manually recording queue times within the OPM system. A daily summary of security queue times from OPM is provided to management for review.

The GAL Finance Analyst calculates CSS security queue times each month based on information entered within OPM. Allowable exclusions (where AOC approval has been provided), and unimpeded walk time are removed as part of these calculations.

South Terminal

GAL utilises an automated security queue system (QSM system) to measure passenger security queues within the South Terminal.

All passengers departing from the South Terminal must scan their boarding pass at an electronic gate as they enter security, which records an image of the passengers face (with an accompanied time stamp). Due to system limitations, there is not a 100% success rate on photo capture for all passengers, however a large proportion of passengers are being included.

Secondary cameras are in place in each security lane which capture passengers when they reach the start of the roller bed and are in a position to be able to retrieve a tray for their belongings. The QMS system calculates the security queue time for the 15 minute segment on the security queue time of the fifth passenger that passes through a security lane. This ensures that security queue times are based on

security lanes that are being actively used throughout the 15 minute period.

Security queue times are automatically recorded in the QSM system, and can be tracked using real-time monitoring software in the security area. Queue times recorded in the QSM system have automatically removed unimpeded walk time.

The GAL Finance Analyst calculates CSS security queue times each month based on information in the QSM system.

We understand that GAL would conduct manual queue timing if the system went down, or if queues extended beyond the electronic gates at any time during core hours.

Flight connections

GAL have contracted OCS to manually record queue times for flight connections, across both the North and South terminals. Given the low volume of passengers who use flight connection facilities, GAL are not currently exploring systemisation in this area.

OCS staff select one passenger at random each 15 minute period during core hours as they approach the transfer area. Queue timing commences when the passenger presents their boarding card to the security officer in the transfer area, and concludes when the passenger reaches the start of a roller bed, being in a position to retrieve a tray to place their belongings in for security screening.

OCS staff record queue times on a manual document throughout the day. At the end of each day, the OCS Administrator manually enters these queue times into a queue time spreadsheet and submits this to the GAL Finance Analyst.

Staff search

Staff security queue times are measured across five different areas within the North and South terminals, as follows:

- North Terminal – Staff (Departures Hall)

- North Terminal – Staff (Arrivals Hall)
- North Terminal – Jubilee House
- South Terminal – Staff
- South Terminal – Atlantic House.

OCS manually measure staff security queue times on behalf of GAL. Similar to flight connections, the low volume of staff who pass through these search areas means there is no current plans for systemisation in this area.

OCS staff select one staff member in each of the five different staff search areas at random each 15 minute period during core hours. The location at which the queue timing starts differs between each staff search area, however in each case has been agreed with the AOC. Security queue times conclude for all staff search areas when staff are in a position to retrieve a tray to place their belongings in for security screening.

OCS staff record queue times on a manual document throughout the day. At the end of each day, the OCS Administrator manually enters these queue times into a queue time spreadsheet and submits this to the GAL Finance Analyst.

External Control Posts – Northern approach gate

As with flight connections and staff search, GAL have contracted OCS to manually record security queue times for the northern approach gate external control post. The CSS Handbook currently only requires security queue times to be measured for the northern approach gate.

OCS staff select one vehicle at random each 15 minute period during core hours. Queue timing commences when the vehicle turns off the main road, towards the control post. The OCS staff member continues to record the queue time until the vehicle is fully within the control 'pen' and has stopped moving. Where no vehicles enter the external control post during the 15 minute period, this is recorded as a nil queue time by OCS.

In line with processes for flight connections and staff search, OCS staff record queue times on a manual document throughout the day. At the end of each day, the OCS Administrator manually enters these queue times into a queue time spreadsheet and submits this to the GAL Finance Analyst.

Passenger operational and airline operational elements

The CSS Handbook requires GAL to measure the availability of a number of assets, across both the North and South terminal, as follows:

- Asset availability (jetties, fixed electronic group power, passenger sensitive equipment, and arrivals reclaim)
- Outbound baggage
- Inter-Terminal shuttle system
- Stand availability
- Pier service.

Asset availability (jetties, fixed electronic group power, passenger sensitive equipment, and arrivals reclaim)

GAL has established asset maintenance plans for each asset, which include planned dates when different maintenance activities are performance. Any assets requiring corrective maintenance are notified to the GAL fault team through a notification line.

Asset availability at GAL is managed via Maximo, an asset management system. All maintenance work, whether planned or reactive, is recorded as a work order within Maximo. Engineers, and contractors, are allocated Maximo work orders and are responsible for performing maintenance and work required. Engineers, and contractors, are required to close work orders directly in Maximo, which then automatically calculates downtime for that asset.

The GAL Finance Analyst generates a Maximo extracts each month (or more regularly where time allows), which shows asset downtime by asset and downtime type (corrective maintenance, planned maintenance etc.). These reports are incorporated into an asset availability spreadsheet

(maintained separately for each asset type) which calculates all downtime for the asset over the month.

Asset availability spreadsheets are sent by the GAL Finance Analyst to the GAL Engineering Managers for their review. Any amendments required (due to data entry errors etc.) are manually applied by the GAL Finance Manager in the asset downtime spreadsheets, as amendments cannot be made directly within the Maximo system.

Outbound baggage

GAL operates an automated baggage system (SAC), from passenger drop off of bags at check-in to delivery of bags to Ground Handler's trolleys. Baggage is scanned throughout its route (including at check-in, or when the bag first enters the baggage system), allowing for real-time baggage tracking through the SAC system.

An automated daily data upload of baggage information occurs between the SAC system and a system managed by a third party (ENGIE). ENGIE analyse baggage information to report daily performance against CSS targets. The algorithms run by ENGIE as part of this analysis have been presented to, and agreed by, the AOC. The Engineering Services team review baggage performance daily, and follow up any unusual results with ENGIE, as required.

Inter-Terminal shuttle system

GAL operates an inter-terminal shuttle service between the North and South Terminals for passengers. As these shuttles are classed as a 'train' under Office of Rail and Road regulation, a shuttle logbook is maintained which captures all downtime, and the associated cause, on a daily basis.

The Shuttle Engineering team manually enters information from this shuttle logbook into a Shuttle Performance Dashboard spreadsheet each day. As part of this data entry, the shuttle downtime is classified to reflect whether this occurs within core hours (per the CSS Handbook) and whether downtime relates to a single or double shuttle outage. The Engineering Manager conducts an independent review of the Shuttle

Performance Dashboard spreadsheet to the shuttle logbook to ensure data accuracy.

Stand availability

GAL stand availability is monitored real-time by the Gatwick Control Centre through the Stand Planning system. All stands that are closed (either due to planned or reactive maintenance) are logged in the Stand Planning System to prevent aircraft from inappropriately being directed to these locations when they land.

The GAL Airside Operations Team also maintain a Stand Availability spreadsheet, which captures all stand closures and the associated reason for closure. Various formulae are applied to this spreadsheet to identify whether the stand outage occurred during core hours, and the total duration of the closure. All stand closures are reviewed by the Airside Operations team on a monthly basis back to planned work plans, and known reactive outages.

Pier service

GAL calculates the number of passengers using pier service stands, compared on remote stands, manually using a dedicated pier service spreadsheet.

GAL Flight Planners record real-time the stand used by each aircraft, along with reasons why a aircraft used a remote stand (where applicable). On a monthly basis, the GAL Finance Analyst extracts a number reports and extracts from different GAL systems which set out flight and stand information, as follows:

- System extract showing the reasons why aircrafts used remote stands
- Details of flights, and associated passenger numbers, that used remote stands during the month
- Number of passengers coached from remote stands.

The GAL Finance Analyst analyses the various data inputs to determine which aircraft, and passenger numbers, were served from remote stands. For each of these aircraft, the reason for use of remote stands is

reviewed to determine whether this fits within allowable exclusions (per the CSS Handbook). The pier service calculation also includes further AOC approved exemptions (where applicable), that represent particular events that took part during the month.

Pier service scores are presented both for the month, and on a moving annual total basis.

Aerodrome Congestion

GAL are required, under the CSS, to pay rebates to airlines where selected 'material events' occur that cause a 'material operational impact' to airport movements.

GAL Duty Managers, and their team, record all potential material events into a superlog spreadsheet on a daily basis. The GAL Assistant Airside Compliance Manager reviews all potential material events recorded in the superlog each week to determine whether these meet the requirements of a 'material event', and to consider whether these have a 'material operational impact'. Guidance on what constitutes a 'material event' and 'material operational impact' are provided in the CSS Handbook.

A monthly analysis of all 'material events' is conducted to determine the maximum cumulative arrival movement deferred, and therefore the impact the 'material event' has on passengers. The analysis is completed based upon the actual aircraft flows, compared to the reference flows. Only where there is a difference between these flows is a rebate payable to airlines.

Airline service standards

The GAL Airline Service Standards include the following two service elements:

- Check-in performance: Queue time
- Arrivals bag performance: First and last bag times on carousel

Check-in performance: Queue time

At the time of our review, GAL were still determining the methodology to be used in measuring check-in queue times. As such, formal tracking of this measure had yet to commence.

Arrivals bag performance: First and last bag times on carousel

GAL records the 'on chocks' time for aircrafts through manual notification from Ground Handlers to the Gatwick Control Centre, and through an automated time stamp from 'SEGS' (the system that records when an aircraft is on the stand, or 'on chocks'). This 'on chocks' time forms the start of the time period measured under this service element.

Ground Handlers are responsible for transporting baggage from aircraft to the reclaim belts (both normal baggage and out of gauge items) and for contacting the Gatwick Control Centre to record the time the last bag is delivered. The GAL Gatwick Control Centre log this last bag time in IDAHO.

The GAL Finance Analyst analyses arrivals bag performance each month using a DIDFLY IBB spreadsheet. This spreadsheet incorporates IDAHO extracts (of 'on chocks' time and last bag time) with information on the aircraft type to assess whether bags were delivered in line with agreed timelines. Any AOC approved exceptions are manually applied in this spreadsheet by the GAL Finance Analyst.

Publication of service performance

The GAL Finance Analysis is responsible for collating all CSS and ASS service performance results each month from operational staff responsible for each service area. Monthly results (for both CSS and ASS service measures) are captured in a 'CSS Performance Tracker' spreadsheet. Any allowable exclusions (i.e. where AOC approval has been provided) are removed by the GAL Finance Analyst as part of final performance calculations for each service measure.

GAL uses an external agency to format the final service performance results for each month. An internal review of this publication occurs by the GAL Finance Analyst, and another member of the Finance team, to

ensure data accuracy before these results are uploaded onto the GAL external website.

Calculation and payment of rebates

The Gatwick Conditions of Use sets out the nature of rebates payable to airlines where CSS targets are not met. GAL's total annual rebate exposure is capped at 7% of revenue from core service charges. Rebates are calculated on a monthly basis, with separate calculations performed for the North and South Terminal.

GAL's rebate exposure for each month is calculated within the CSS performance tracker. Rebate exposure for each month is based on total estimated core service charges, estimated passenger numbers and the total rebate exposure for each service elements (per the Conditions of Use). This rebate exposure is further broken down by airline based on their share of core service charges and passenger numbers for the terminal.

The GAL Finance Analyst collates monthly CSS and ASS compliance within the CSS performance tracker on a monthly basis. Where a service element has been breached, the rebate payable is calculated within the Rebates spreadsheet. This spreadsheet links into the CSS performance tracker to identify breaches of CSS and ASS targets, and calculates the rebate payable based upon each airline's share of core service charges and any discounts payable (generally through variations to rebate calculations agreed by Gatwick and the airline in their bilateral

contracts). Rebates are only payable to airline where they have paid core service charges to GAL and they have met ASS targets.

Rebate calculations are performed by the GAL Finance Analyst are reviewed by an independent member of the Finance team. Rebates are calculated on a monthly basis and are paid to airlines (by way of a credit note) on a quarterly basis.

At the end of the financial year, the GAL Finance team completes a wash up exercise to determine the actual rebate payable to each airline based on the actual passenger traffic and core service charges. The variance in the calculation of the annual rebate compared to rebates paid during the year are made via a wash-up credit note / invoice to each airline.

6 Detailed findings

The following observations were identified during our review as having a direct, or potentially direct, impact on service performance scores, and associated rebates, reported by GAL.

6.1	Medium	Independent validation and monitoring of security queue times
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Finding and Implication	Proposed action	Agreed action (Date / Ownership)
Finding GAL currently contracts a third party, OCS, to manually record queue times for all areas covered by the core service standards, except South Terminal general search (which utilises an automated queue time system). GAL Security Team Leaders conduct independent spot checks of queue times recorded by OCS. These spot checks occur over all security areas where manual queue times are recorded, and across different time segments. The outcome of these spot checks enable GAL to monitor queue times on an on-going basis via Security Team Leaders generating their own security queue times and comparing these with the third party. As part of our audit, we selected a sample of 45 time slices (within the CSS core hours) across February 2016 and March 2016 to independently recalculate OCS recorded queue times. Our sample was spread across all security screening areas, being North Terminal passenger central search, North and South Terminal passenger flight connections, North and South Terminal staff search and external control posts. We were unable to validate OCS manual queue times retrospectively in 30 of the 45 time slices selected for testing.	We support GAL's decision to implement facial recognition software for passenger search in the North Terminal. Once in place, this will remove the need for OCS to manually record security queue times in this area. GAL should review the methodology adopted to independently spot check queue times recorded by OCS. Consideration should be given to increasing the number of spot checks conducted to ensure that OCS are correctly recording manual queue times across GAL. As part of this, formal requirements should be in place to evidence spot checks have occurred and the results of these.	<i>Gatwick monitors the performance of our queue timing contractor very closely to ensure good performance by undertaking spot checks of the times generated. Good performance of this contractor is very important for our ability to effectively roster our staff. In our view this method of monitoring is effective.</i> <i>In the short term we also note that the technology used for capturing queue times in the North Terminal will move to an automated system.</i> <i>With regard to the recommendation that checks may not operate effectively due to few checks being undertaken early in the morning or late at night our systems of forecasting passenger flows and rostering means that we have a very good picture of expected passenger flow, and if the passenger throughput profile changes then we would expect to undertake more tests early in the morning.</i> <i>As is good practice we suggest we continue to use a risk based approach to validation and</i>

6.1	Medium	Independent validation and monitoring of security queue times
Finding and Implication	Proposed action	Agreed action (Date / Ownership)
We acknowledge that GAL are implementing facial recognition software for passenger search in the North Terminal. Once implemented, this will remove the need for OCS to manually record security queue times in this area. Implication There is a risk that manual security queue times recorded by OCS do not accurately reflect the queue times passengers face, impacting upon the accuracy of service reporting. Furthermore, our testing identified a risk that independent spot checks of OCS manual queue times conducted by GAL may not be designed or operating effectively. For example, few checks are currently occurring during early morning or late at night.		<i>target our spot checks at times when passengers are using the facility in sufficient numbers.</i> <i>A final observation is that this testing was undertaken using CCTV system as the chosen method for testing. This is not the intended function of this system and it was not suitable for retrospectively testing queue times (This does however not affect its primary function). This meant the testing results cannot be treated as conclusive. It is therefore not clear that additional controls are needed.</i> <i>Date Effective: Implementation of the automated security measurement system in NT is currently anticipated in Autumn of 2016</i> <i>Owner: Peter Lederer</i> AOC comment: <i>The North Terminal is moving to automated queue measurement from August 2016 at this point the recommendation is no longer valid.</i> GAL note: <i>no further update needed</i>

6.2	Medium	Inbound baggage score discrepancies
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Finding and Implication	Proposed action	Agreed action (Date / Ownership)
Finding The inbound baggage service metric was first introduced in April 2014. Since its introduction, GAL have made several changes and enhancements to the way in which this service metric is calculated, including a full review of the calculation methodology being applied one year after this was implemented. Our audit identified six discrepancies between inbound baggage service element scores as per the published results and the supporting documentation retained by GAL. We tested a sample of five months' calculations of inbound baggage performance scores and compared these against scores that had been externally published. Our testing identified four variances between the internal calculation spreadsheet used by GAL to calculate the service measure, and the published service performance results (on the GAL website). We understand that amendments have been made by GAL to their inbound baggage score calculation model, which have led to variations between internal calculations and information published on the GAL website. Refer to Appendix F for further details. We also reviewed how inbound baggage service metric scores are used as part of rebate calculations. For four of the five months we reviewed, we were unable to tie flight data from the inbound baggage service metric spreadsheets into the rebate calculation spreadsheet. Investigation of these variations by GAL identified that these discrepancies are due to errors in a pivot table used to calculate total flight numbers (airlines that do not fly on a regular basis were not being picked up within the pivot table). We acknowledge that as Airline Service Standard results reduce rebates payable by GAL, the variations identified as part of our testing indicate that GAL may have overpaid rebates to airlines, rather than additional rebates now being payable.	We support the initiative taken by GAL to introduce quality assurance checks of all service element scores prior to these being published. The nature of checks conducted as part of this review should be reviewed in light of the variances identified to ensure that sufficient checks are being conducted. GAL should retrospectively update any input variances within the rebate spreadsheet and the published results to reflect the actual results. GAL should explore the systemisation of inbound baggage score and rebate calculations as part of the wider system improvement project.	<i>In relation to where differences existed between what was published on the GAL website and the supporting documentation, these have now been updated to reflect the correct IBB scores. Going forward further quality assurance reviews will take place to reduce the likelihood of this issue re-occurring.</i> <i>In relation to the second point, that being where the rebate calculation model did not pick up all the flights in the IBB model, this highlighted a very minor discrepancy which resulted in a very small number of flights being missed out of the rebate calculation (to the rebate value of £432). To eliminate the risk of this re-occurring, a simple check has been implemented whereby the total number of flights in the rebate model is cross checked to the total number of flights in IBB model.</i> Date Effective: 01.06.16 Owner: Mark Browse AOC comment: No further comment GALnote: No further update

6.2	Medium	Inbound baggage score discrepancies
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Finding and Implication	Proposed action	Agreed action (Date / Ownership)
Implication There is a risk that inaccurate service element scores are reported, which would result to either financial loss (via rebates payable) or reputational damage. Furthermore, there is a risk that rebates are inaccurately calculated, leading to either financial loss for GAL. We acknowledge that the materiality of this is low, with GAL's recalculation of rebates showing that the total value of this variation was £432 over a six month period. We acknowledge that the top 20 airlines at GAL represent the majority of all traffic through the airport. This observation relates only to airlines that do not use GAL on a regular basis, and therefore are do not comprise a material impact upon operations, or rebate calculations.		

6.3	Low	Manual queue time records captured during core hours
Finding and Implication	Proposed action	Agreed action (Date / Ownership)
Finding GAL has contracted OCS to conduct manual queue times on their behalf for all areas included in the CSS Handbook, except the South Terminal general passenger security search (which utilises an automated queue time system). OCS capture all queue times on manual documents, which are input into a queue time spreadsheet each day by an OCS Administrator. As part of our review, we selected a sample of queue times that OCS have manually recorded to tie OCS documentation into GAL queue time calculation models, and back to CCTV records. In all 15 samples selected relating to North Terminal general passenger security search we identified time periods that fall within the CSS Handbook core hours that did not have a queue time recorded. These are as follows: 17 February 2016 – No queue times have been recorded between 2.30am – 3.15am, and 8.30pm – 10.30pm 23 February 2016 – No queue times have been recorded between 8.30pm – 10.30pm 1 March 2016 – No queue times have been recorded between 7.45pm – 10.30pm. Discussions with GAL staff noted that the above blank records are due to no passengers going through security during these times. However, this is not noted on the OCS manual queue forms. Furthermore, our review of passenger numbers for February 2016 (as recorded in the OPM system) identified that a small number of passengers were going through during this time. GAL staff noted that these passengers were likely to be GAL staff or cleaners who had inappropriately been captured as	GAL should remind OCS of the need to note down where no passengers pass through security during core hours.	<i>Gatwick will undertake a training refresher of OCS to ensure the process matches requirements as defined in the CSS handbook and the queue timing contract, including noting periods when not passengers use a facility. GAL believes that their current method of checking the third part queue timing company, OCS, is valid and relevant and does not propose to alter this process.</i> <i>Date Effective: 01 07 2016</i> <i>Owner: Peter Lederer</i> AOC comment: <i>The introduction of automated queue measurement will replace this recommendation.</i> GAL note: <i>No further update</i>

1.	Background and scope
2.	Executive Summary
3.	Findings
	Appendices

6.3	Low	Manual queue time records captured during core hours
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Finding and Implication	Proposed action	Agreed action (Date / Ownership)
passengers. Implication There is a risk that published security queue times do not represent actual security queue times were OCS are not maintaining full records during core hours.		