REPUBLIC OF MAURITIUS

DEPARTMENT OF CIVIL AVIATION

Sir Seewoosagur Ramgoolam International Airport, Plaine Magnien

MAURITIUS CIVIL AVIATION REQUIREMENTS

MCAR

RISK BASED SURVEILLANCE POLICY MANUAL

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FOREWORD

The Department of Civil Aviation of Mauritius has developed this Risk Based Surveillance (RBS) requirement to comply with the standards laid down in ICAO Annex- 19 (Safety Management), the requirement provisioned in the MCAR SSP and MCAR Safety Management and other relevant documents. This manual has been issued by the Authority pursuant to Regulation 135 of the Civil Aviation Regulations.

This MCAR explains the requirements, processes and procedures to determine the organisational risk level and modify the authority's surveillance frequency. The RBS approach also helps the Authority to use its resources in an efficient manner and to identify the deficient areas or areas of safety concern of the organisation so that additional focus can be given to such areas during surveillance activities.

Ultimately, this approach will help improve the aviation safety level as a whole by reducing accident and incident in flight operations. At the State level, Risk Based Surveillance provides a mechanism for better identifying hazards and measuring associated risks as well as demonstrating effective mitigation of these risks.

This concept will ultimately allow the Department of Civil Aviation to focus its attention on organisations that require additional or closer attention, strengthening the efficiency of the oversight. At the same time, an improved understanding of the risks across the aviation system will increase effectiveness of the oversight, based on an improved risk picture that considers the causal factors of all safety occurrences.

Therefore, the implementation of Risk Based Surveillance Approach in Audit and inspections also helps for effective implementation of State Safety Programme (SSP) in Mauritius.

Any Comments or suggestions for the improvement of these requirements may be forwarded to Department of Civil Aviation. The Department of Civil Aviation will update this MCAR as and when necessary.

I POKHUN
Director of Civil Aviation

RECORD OF REVISIONS

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PURPOSE

The objective of Risk Based Oversight is to provide a mechanism, that allows DCA to direct its attention towards organisations that require additional or closer attention, thereby strengthening the efficiency of the oversight. Simultaneously, it helps in effectively establishing and maintaining the State Safety Program (SSP) in Mauritius.

References

1. The Mauritius Department of Civil Aviation - Safety Management Unit - has developed this Risk Based Oversight (RBO) procedure Manual to comply with ICAO Annex-19 (Safety Management), the requirements outlined in the Mauritius MCAR-SMS, and other relevant documents.

2. The criteria are primarily based on the ICAO ISTARS Risk Based Surveillance Application, EASA practices for Risk - Based oversight, and best practices used by other CAAs, modifications have been applied by DCA to suit our activities and provide guidance for each question, supporting our inspectors in thoroughly assessing the system and area being inspected, taking into consideration the complexity of the operator.

   Each main question is divided into sub-questions and assigned a weight as explained in item 4.1 Organisational Risk Profile (ORP).

3. All Mauritian AOC holders are encouraged to use this MCAR Requirements internally within their organisations, to adopt the criteria of Risk Based in internal auditing to better assess their system and identify the organisational and operational risks based on the organisation's performance. Other services providers are encouraged to use this MCAR after applying modifications in the questionnaire to suite their activities, to practice the Risk Based Approach.

4. Compliance with the standards and regulatory requirements remains the basic element to ensure safe operations, while Risk Based Oversight assesses the effectiveness of the measures implemented to achieve the safety objectives.

APPLICABILITY

The Department of Civil Aviation has been implementing this enhanced RBO methodology in the form of a trial phase for its oversight activities since 2021 up to 2024, mainly within the AOC holders' domain. This trial phase will continue until 2026, when the Department of Civil Aviation is expected to reach the maturity stage of this enhancement method's implementation. As from 2027 the Department of Civil Aviation will then expand its application to all other domains.

The oversight planning of the year 2025 will be based on the current method used by DCA in the oversight on AOC holders including the MCAR -Part 145 Organisations. This will involves conducting, at a minimum, a full in-premises (audit/inspection) of the AOC holder's base and stations within a year). This approach takes into consideration the increment in oversight activities due to (new AOC holder during the initial establishment period, and/or in response to an accident, serious incident, or "audit/inspection" raised findings' concern either carried out by DCA or other foreign entities).

The DCA inspectors will use the RBO questionnaire checklist during the AOC holder auditing cycle in 2025, the Safety Management System will be an integral part of the auditing team, while Inspectors from other Units will use the traditional compliance auditing checklist.

All gathered data will be directed to the Safety Management Unit, along with information generated from SDCPS based on the AOC holder's performance. Subsequently, this information will be shared with the concerned DCA Units to adjust and modify the oversight activities based on the data generated.

The oversight year 2025, auditing AOC holders will be treated as a live planning program. Meaning a full/partial (audit/inspection) will be the result of implementing this enhanced Risk-Based Oversight methodology.

CHAPTER 1
CONCEPTUAL MODEL

1.1 Concept of Risk-Based Oversight System

1.1.1 Risk-Based Oversight planning is driven by the organisational risk profile, which is (the combination of Organisational Safety Performance and Operational Complexity Level); and the execution of this planning focuses on the management of risks, in addition to ensuring compliance. A risk-based approach to oversight entails the assessment of the performance influencing factors, organisational changes, and other safety performance indicators that contribute to an organisation's dynamic risk profile. DCA is developing a process that acquires and analyses different sources of intelligence that provide insight into the changing risks in operations, determining the appropriate oversight frequency.

1.1.2 To better visualise the feedback loops, the following RBO scheme, based on the PLAN, DO, CHECK, ACT concept is employed, taking into account the safety performance and provides a structured approach to Risk-Based Oversight. the following conceptual model is used:

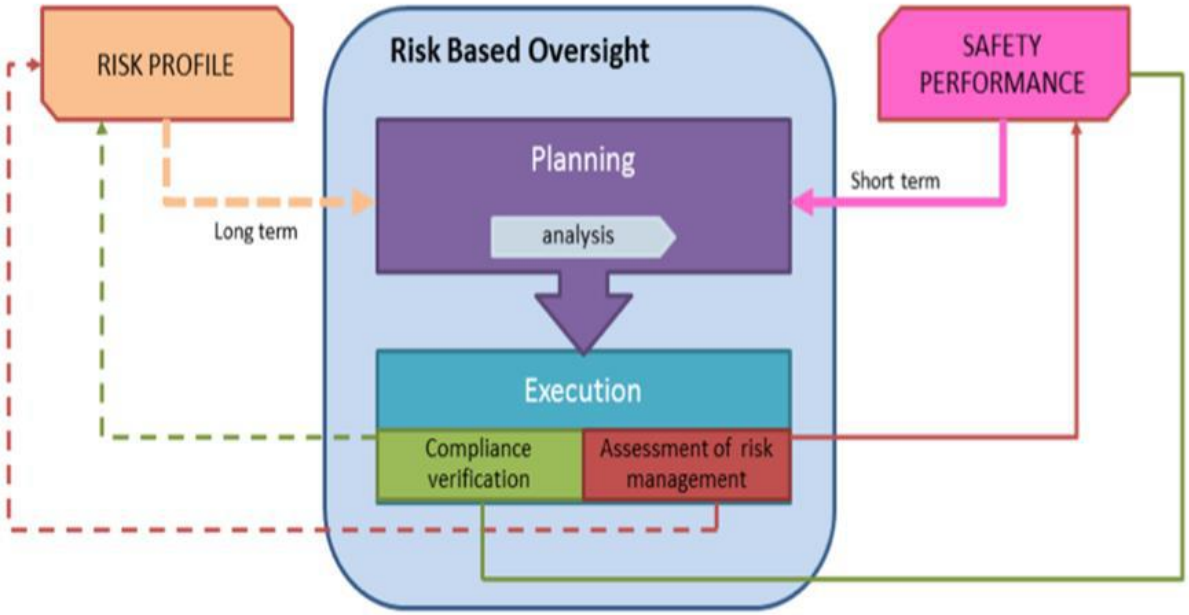

Figure 1: Conceptual Model of RBO

1.1.3 RBO combines the two phases of “planning” and “execution”. In the “Planning” phase, the prioritisation and content of activities are determined through an analysis of the information derived from the risk profile and the overall safety performance, which includes:

- the specific nature of the organisation,
- the complexity of its activities,
- the Safety Performance Indicators (SPI),
- the outcome of previous oversight,
- an assessment of associated risks.

1.1.4 The aforementioned factors shall be integrated with contextual information from various intelligence sources, such as isolated events, reorganisation, retirement of key employees, reported occurrences, financial health, etc. The outcomes of this planning phase should be periodically reviewed since the level of risk the organisation is exposed to, could be constantly changing due to various factors. The choice of cycle length and audit interval shall be determined by the availability of resources. For this purpose, the following approach is used:

- For each operator, the cycle length is derived from its individual risk profile which is calculated with the help of Organisational Safety Performance Level (considering areas of flight operations, technical capacity, organisation, compliance, and safety management) and Organisational Operational Complexity Level. DCA shall then allocate available resources to ensure oversight occurs as close to the desired cycle interval as possible.
- During the “execution” phase, attention is dedicated to both “compliance” and “risk management”. Compliance remains the basic element to ensure safe operations, while risk management assesses the effectiveness of the measures implemented to achieve the safety objectives.
- In the short term, immediate action may be necessary to address safety performance concerns arising from the oversight, encompassing both planning and content. Alternatively, in the longer term, adjustments to the risk profile through appropriate mitigations might be required.

1.2 SSP and Management System as Drivers to RBO

1.2.1 At the State level, RBO provides a mechanism for better-identifying hazards and measuring associated risks as well as demonstrating effective mitigation of these risks. This ultimately enables the DCA to concentrate its efforts on organisations that require additional or closer attention and strengthening the efficiency of the oversight. Furthermore, through an enhanced understanding of risks within the aviation system, oversight can be more precisely calibrated based on an enhanced risk picture that takes into consideration the causal factors of safety occurrences, encompassing isolated events, incidents, and accidents.

1.2.2 SSP is the ICAO tool for a State to define and achieve its safety objectives. This includes the gathering of data and identification of areas that pose higher risks or require more attention. A State should establish mechanisms to ensure the collection and storage of data on hazards and safety risks for each organisation under its oversight, as well as at an aggregated State level. Additionally, mechanisms should be in place to extract information from the stored data and actively exchange safety information with service providers and/or other States, as appropriate. A significant number of the ICAO SSP elements are accomplished by the management system demanding a safety risk management process, a compliance monitoring function, and the mutual exchange of all necessary information. Therefore, the oversight program shall:

- Take into account the risk profile, specific nature, and types of operations of the organisations, as well as the assessment of associated risks and the State's safety performance indicators at both the aggregate and organisational levels.

- Incorporate a mechanism to adjust the scope or frequency of oversight based on the collected safety information, actual safety performance, and the management of changes for the organisations.

- Plan for the availability of DCA staff to ensure the proper completion of oversight activities.

- Contribute to the State safety assurance element and the State safety promotion activities.

The adoption of a risk-based approach for oversight prioritisation will also aid in directing resources towards areas that pose greater risks, concerns, needs, or emerging risks, leading to more efficient resource utilisation.

CHAPTER 2
RISK PROFILE AND OVERSIGHT PLANNING

2.1 When developing the oversight program, the Department of Civil Aviation shall assess the risks associated with the activity of each organisation This assessment allows for the adaptation of the oversight program to align with the identified level of risk and the organisation's capability to effectively manage safety risks.

2.2 Therefore, the first step towards achieving RBO is to determine the organisational risk profile for each regulated entity, which will support the prioritisation, development of content, and planning of oversight. As a result, the Department of Civil Aviation oversees the organisations under its supervision not only in administrative terms as an approval holder, but also in terms of risk, where the continued validity of the approval is ensured by a set of predefined steps prescribed by the regulation. The logical consequence is the determination of the oversight activities based on the outcome of the risk profiling.

2.3 The calculation of the risk profile is a multifaceted process that considers several factors. This includes evaluating the organisation's management system, examining its safety culture, and assessing how it addresses the challenges of operating within the national aviation industry. The size, scope, complexity of operations, and the organisation’s risk exposure are always at the heart of the analysis.

2.4 The Department of Civil Aviation shall adopt a progressive approach, which can be outlined as follows:

(a) Start with one specific domain;

(b) Gain experience, and subsequently;

(c) Expand the implementation of these practices to other domains.

2.5 Initially, DCA will adopt RBO approach for Air Operators (AOC Holders only). Subsequently, this process will be progressively extended to include Aerodrome Operators, ANS Operator, and other relevant entities.

The annual safety reviews generated by DCA encompass the analysis and aggregation of the oversight outcomes and reported safety events. These reviews will aim to find correlations or identify patterns or trends. A common element across all these practices is the utilisation of data in conjunction with expert judgement during the risk profile definition. This decision is logically considering the lack of consistency in the currently available data sources. Any

algorithm that combines safety and background data to provide a risk indication could be easily challenged in its theoretical basis.

2.6 To ensure that expert judgement supports consistent risk profiling, the related decision-making is executed through a consensus-based decision-making approach. This involves a team of subject matter experts and DCA inspectors, who operate within the same technical domain, sometimes supported by safety analysts. By blending individual biases and opinions within the consensus process, the team can evaluate and continuously review the risk profile and performance assessment in a consistent manner. This approach also facilitates the standardisation of practices among inspectors, allowing the utilisation of gained experience, and further trains inspectors to achieve a common approach.

2.7 Once RBO becomes firmly established, it is expected that expert judgement will continue to play a crucial role in determining the risk profile, however, this evaluation should be carried out in the following manner:

(a) By a team of experts, so that no judgement is made solely by one person, and

(b) By utilising comparative analysis, such as comparing scores with the average in a similar category, to better ascertain what, why, and when oversight is required.

2.8 When utilising a model or scoring system for risk profiling or risk evaluation, it is crucial to recognise that:

- The variation of the indicators holds greater significance than the indicators themselves, therefore excessive focus should not be placed on absolute figures.
- The regular monitoring of the trends of these indicators shall be carried out over time.
- Calibration and weighing of indicators are fundamental to support proper profiling (e.g., excessive weighing of one single factor could alter the outcome of calculations).
- Avoid being bogged down by the scoring system as it's more important to assess the relevance of the outcome.
- Adequate attention shall be given to borderline situations to avoid inaccurate decisions.

2.9 The execution of RBO requires that direct interaction with the regulated entities goes beyond the mere verification of compliance with all applicable regulatory requirements. Communication should now take place at different levels, not only at the technical aspects. The organisation's senior management must be involved when assessing and discussing the safety performance. RBO requires the ability to move away from the traditional checklist, to understand how an organisation is managing its risks and whether the safety management system is effective and delivering the expected results.

CHAPTER 3
ENABLERS AND TOOLS

3.1 Management of safety information

3.1.1 Data plays a crucial role in supporting the RBO process. To ensure the accuracy and relevance of the data, it is imperative to carefully identify the sources of information. Moreover, data sharing is of great importance as it broadens the range of available data for analysts. Finally, data quality is crucial to support proper decision-making, otherwise, outcomes can be misleading.

3.1.2 This is further emphasised by ICAO Annex 19 which requires that information is systematically collected, analysed, and monitored to identify risks and measure progress against outcomes.

3.1.3 RBO relies on data collection and safety modeling as part of an effective Management System of the authority and mature Management System within regulated entities. Various data exchange programs for Aviation Safety shall properly feed RBO and it becomes possible to measure and monitor the level of safety performance. In addition, information on the effectiveness of the safety barriers (mitigation strategies for risks) can be continuously gathered.

3.1.4 It is not possible to exhaustively mention all the enablers or tools available, the following are some of the key ones but not limited to:

- Mature Safety Management.
- Management of safety information.
- Information sharing.
- Just/Safety culture.
- Data-Driven Decision-Making (D3M).
- Training and qualification of inspectors.

3.2 Training and qualification of inspectors

3.2.1 The qualification of the staff is a crucial element in performing a risk-focused surveillance, In addition to the necessary technical expertise in their respective domains, supplementary competence is also required.

3.2.2 By maintaining a constant dialogue with the organisation, inspectors can adopt a more proportionate approach that enables them to gain a deeper understanding of risk mitigation. This approach also allows inspectors to

evaluate the effectiveness of the mitigation process and assess the organisation's safety management system's level of maturity. Acquiring the ability to assess safety management systems is essential for authority inspectors.

3.2.3 Furthermore, the ability to measure safety performance should be integrated into the inspectors' knowledge base. This entails having a fundamental comprehension of:

- Safety analysis techniques and root cause determination, and
- How to work with safety indicators.

3.2.4 The duration of the training should be adequate to allow the achievement of the objectives outlined above. It is not possible to recommend a standard training duration, as the starting point may vary depending on the background and the knowledge of each individual to be trained.

3.2.5 An organisational cultural analysis should be conducted to identify the competence elements needed to enable inspectors to implement RBO and to identify the needs of the Authority.

3.2.6 The competence necessary for RBO can be summarised in Figure 2, utilizing the KSA model (knowledge, Skills, and Attitude). It is crucial to possess as a minimum level of training in auditing techniques, SMS, and human factors to effectively encompass the model.

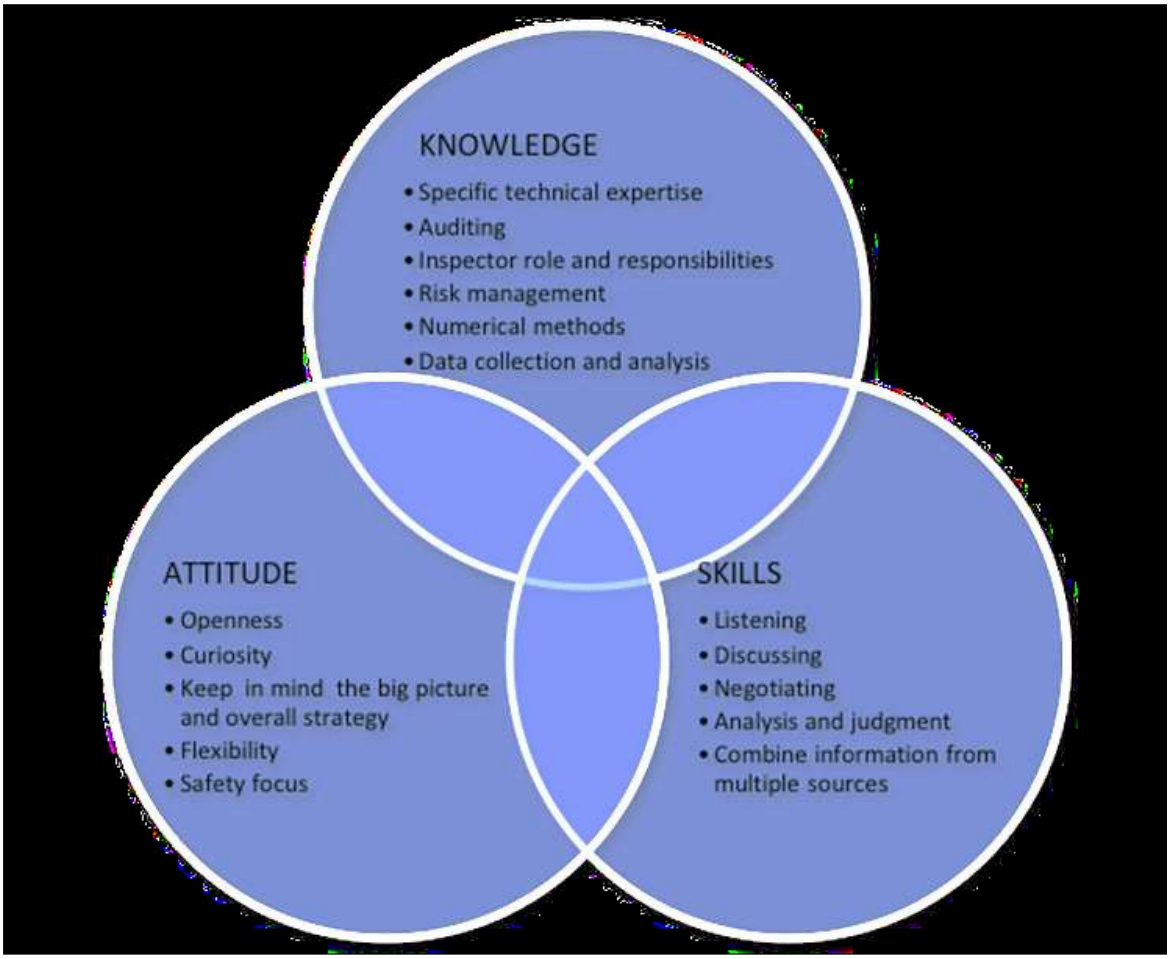

Figure 2: Training and Qualifications of Inspectors involved in RBO activities.

CHAPTER 4
DEVELOPING ORGANISATIONAL RISK PROFILE AND MODIFYING OVERSIGHT FREQUENCY

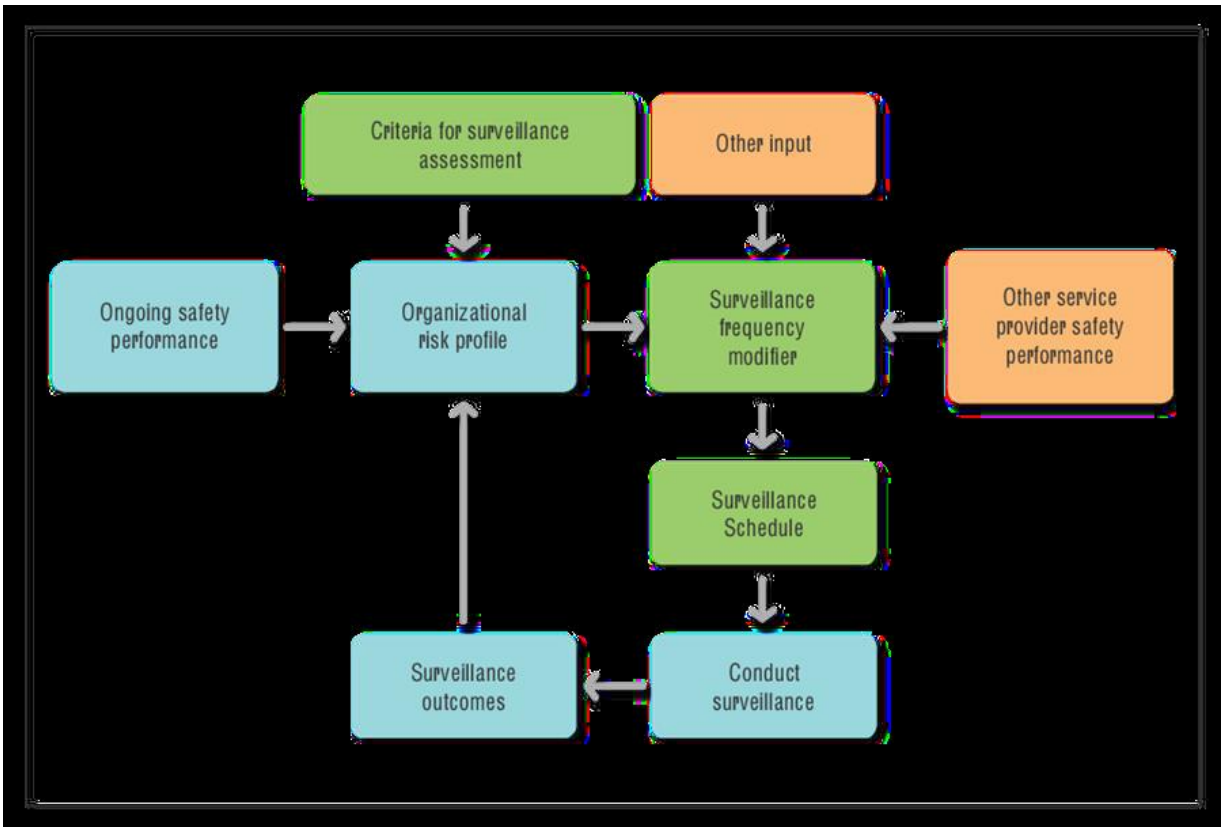

Figure 3: Concept of Organisational Risk Profile and Oversight Frequency

4.1 Definition of Organisational Risk Profile (ORP)

4.1.1 Determination of Organisational Safety Performance Level (SPL)

4.1.1.1 The SPL of an AOC holder takes into consideration 45 safety parameters across 5 areas, namely Safety Management, Organisation, Compliance, Technical, and Flight Operations. During the respective audit/inspection, approximately half of these parameters are assessed, while the remaining parameters are automatically rated using information recorded in the State Safety Database System. This approach results in the development of a dynamic risk profile. The detailed list of parameters can be found in Appendix 1.

4.1.1.2 Each safety parameter is assigned a score ranging from 3 to 0, with 3 representing an extremely high level of safety performance, 2 representing a high level of safety performance, 1 representing a low level of safety performance, and 0 representing a very low level of safety performance.

Note: some safety parameters are weighted as either (3 or 0) only, representing a (very high or very low) level of safety performance, respectively.

4.1.1.3 Hence, the total score obtained for each area is calculated and converted into a percentage, while considering that the maximum achievable score for an area is 100%

4.1.1.4 Example:

In the area of Safety Management, if the total score is 20, then the SPL is 66.67% = 67% (approx.)

- Total number of parameters in the Safety Management area is 10
- Maximum achievable score for each parameter is 3
- Total maximum achievable score in the Safety Management area is (10 x 3) = 30
- The total obtained score for a particular organisation in the Safety Management area is 20
- The obtained SPL in the Safety Management area is therefore (20/30) x 100 = 66.67%

4.1.1.5 When Safety performance levels represented in percentage, for the 5 areas are calculated, they are depicted in an appropriate graph (chart), revealing the following observations:

- The organisation's overall safety performance level is determined by averaging the safety performance levels of all 5 areas.
- The deficient areas of the organisation that need more attention during audits or inspections become apparent.

Figure 4: Safety Performance Level for a Specific Operator.

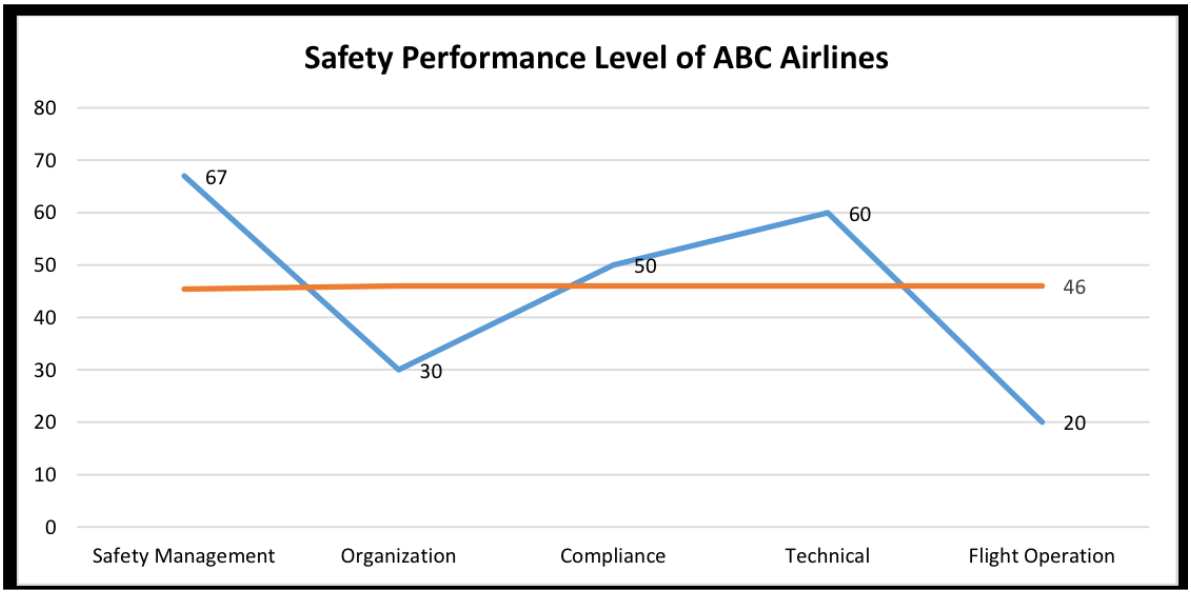

Figure 5: Concept of determining Safety Performance Level of an organisation

As shown in the graph above: The Average value is 46 % which is the overall SPL of the organisation.

4.1.2 Determination of Operational Complexity Level (OCL) of an Organisation. The OCL of an AOC Holder considers 10 safety parameters.

4.1.2.1 Each safety parameter is assigned a score ranging from 0 to 3, with 0 representing a very low level of operational complexity, 1 representing a low level of operational complexity, 2 representing a high level of operational complexity, and 3 representing a very high level of operational complexity.

4.1.2.2 Hence, the total score obtained for parameters is calculated and converted into a percentage, while considering that the maximum achievable score is 100%.

4.1.2.3 Example:

If the total score of all parameters is 15, then it is 50 %. Calculation:

- Total number of parameters is 10
- Maximum achievable score of each parameter is 3
- Total maximum achievable score is (10 x 3) = 30
- The total obtained score for a particular organisation is 15
- The level of operational complexity of the organisation is (15/30) x 100 = 50 %

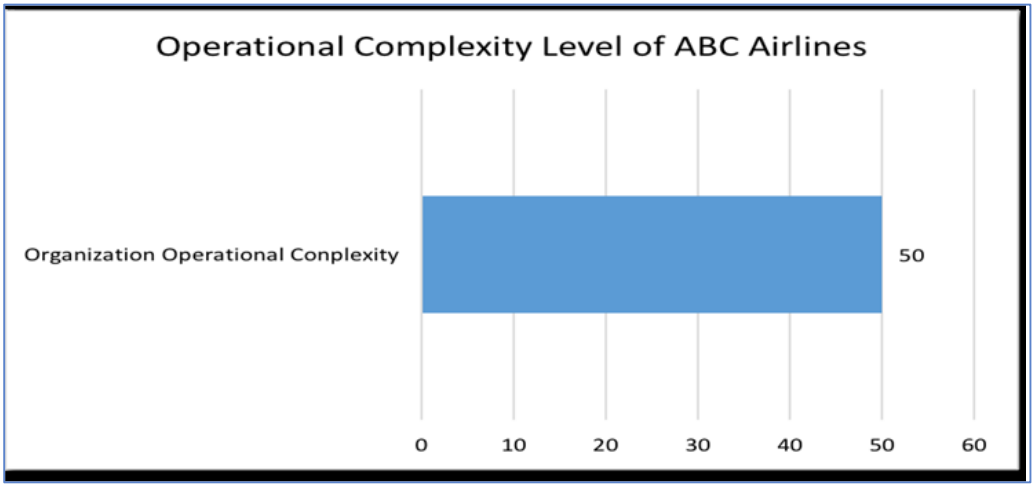

Figure 6: Organisation 's Operational Complexity Level - OCL

4.1.3 Determination of Organisational Risk Profile (ORP)

4.1.3.1 By combining the overall safety performance level of an organisation and the level of the organisation 's operational complexity, the Organisational Risk Profile (ORP) is determined. When the SPL and OCL are plotted in graphical format the ORP is derived. Based on the ORP, oversight (Audit/Inspection) frequency is determined. There are three types of organisational risk profiles which are:

- Low
- Medium
- High

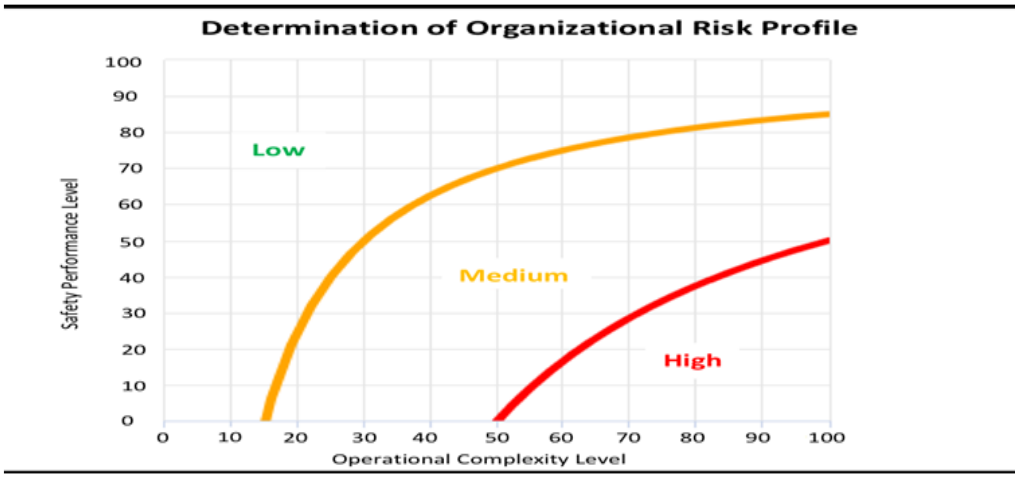

Figure 7: Organisational Risk Profile

Conditions	Audit/Inspection Interval	Risk Assessment
No CAT 3 findings*	The risk is low, Audit / Inspection interval can therefore be twice within 12- month cycle.	**Low**
No CAT 3 findings*	Interval for Audit / Inspection is set to 4 months intervals within 12 -month cycle.	**Medium**
	Interval for Audit/inspection is set to 3-month intervals within 12- month cycle; however, the higher risk area parameters shall be given more attention during audit/inspection.	**High**

* For low and medium, if CAT 3 findings are raised, the audit/inspection interval cycle must be based on the next higher level. This shall be applied (for the current cycle and while planning the audit/inspection program for the next year).

4.1.3.2 Low Risk Profile (LRP):

If the combined point of SPL and OCL falls within the Low-risk zone (upper left corner part) as illustrated in Figure 7, it is considered that the ORP is low and the oversight frequency should be scheduled for a minimum of twice within a 12 -month cycle, subject to the following conditions:

- No Category 3 findings;
- In the presence of a Category 3 finding, it is crucial to adjust the audit/inspection interval cycle to reflect the next higher level. This adjustment must be made for the current cycle and taken into account when formulating the audit/inspection program for the upcoming year.

4.1.3.3 Medium Risk Profile (MRP):

If the combined point of SPL and OCL falls within the Medium-risk zone (middle part) as illustrated in Figure 7, it is considered that the ORP is medium and oversight frequency should be scheduled and set to 4-month intervals within 12- month cycle, subject to the following conditions:

- No Category 3 finding;
- In the presence of a Category 3 finding, it is crucial to adjust the audit/inspection interval cycle to reflect the next higher level. This adjustment must be made for the current cycle and taken into account when formulating the audit/inspection program for the upcoming year.

4.1.3.4 High Risk Profile (HRP):

If the combined point of SPL and OCL falls within the high-risk zone (lower right corner) as illustrated in Figure 7, it is considered that the ORP is high and oversight frequency should be scheduled and set to 3-month intervals within 12 months cycle, subject to the following condition:

- All higher risk area parameters shall be given more attention during audit/inspection, either in the current cycle or while planning the audit/inspection program for the next year).

4.1.3.5 This entire approach requires:

(i) Careful selection of personnel.

(ii) Qualitative, evidence-based evaluation by the Flight Operations, Airworthiness and Safety Management Inspectors, and other experts as required.

(iii) Interaction with the AOC holder.

(iv) Individual parameters are “weighted” according to the Authority assessment, considering potential risks.

(v) Risk profile is periodically reviewed, and oversight frequency is modified.

APPENDIX 1
CALCULATION OF ORGANISATIONAL SAFETY PERFORMANCE LEVEL– SPL

Calculation of Organisational Safety Performance Level– SPL			**Checklist: DCA 19-XXX**
Organisation		**DCA Approval No.**	
Auditee name & signature			
Inspector & signature			**Date:**

A- SAFETY MANAGEMENT					
No.	**Statement**	**Level of Safety Performance**			
		0	**1**	**2**	**3**
1	The Organisation has a formal safety data collection and processing system (SDCPS) for effectively collecting information about hazards in operations. **Weighing:** ➢ The SDCPS includes a combination of reactive and proactive methods of safety data collection, the Reporting system is simple, accessible, and commensurate with the size of the operator. There is a feedback process in place to notify contributors that their reports have been received and to share the results of the analysis. (**3**) ➢ The SDCPS includes a combination of reactive and proactive methods of safety data collection, the Reporting system is simple, and accessible, but isn't commensurate with the size of the				

	operator. There is a feedback process in place to notify contributors that their reports have been received and to share the results of the analysis. (**2**) ➢ The SDCPS includes a combination of reactive and proactive methods of safety data collection, the Reporting system is simple, and accessible, but isn't commensurate with the size of the operator. There is no feedback process in place to notify contributors that their reports have been received and to share the results of the analysis. (**1)** ➢ The organisation SDCPS doesn't include a combination of reactive and proactive methods of safety data collection. Reporting system is simple, and accessible, but doesn't commensurate with the size of the operator. There is no feedback process in place to notify contributors that their reports have been received and to share the results of the analysis. (**0**)				
2	The organisation has a formal process in place to ensure due analysis, assessment, and control of the safety risks in operations. **Weighing:** ➢ All risks are eliminated, mitigated, or ensured against by well-understood mechanisms apparent at all levels of the organisation. (**3**) ➢ Most risks are eliminated, mitigated, or ensured against. Risk management is well-understood, and unacceptable outcomes are usually prevented by				

	well-understood controls and procedures. (**2**) ➢ The concept of risk management is understood but not well implemented. (**1**) ➢ Risk management is not well understood, and controls are ineffective or rarely implemented. (**0**)				
3	The organisation's safety performance, as well as the effectiveness of safety risk controls, are continuously monitored. **Weighing**: ➢ The organisation has defined and monitored appropriate safety performance indicators, alerts, and targets. They are periodically reviewed to ensure they are appropriate and relevant. All SPIs are acted upon in accordance with the approved alert trigger criteria which have been set by the organisation. (**3**) ➢ □ The organisation has defined and monitored appropriate safety performance indicators, alerts, and targets. They are periodically reviewed to ensure they are appropriate and relevant. Actions are taken on most of the SPIs in accordance with the approved alert trigger criteria which have been set by the organisation. **(2**) ➢ □ The organisation has defined and monitored appropriate safety performance indicators, alerts, and				

	targets. They are periodically reviewed to ensure they are appropriate and relevant. Actions are taken on some of the SPIs in accordance with the approved alert trigger criteria which have been set by the organisation. (**1**) ➢ The organisation has defined and monitored appropriate safety performance indicators, alerts, and targets. They are periodically reviewed to ensure they are appropriate and relevant. No actions are taken against any of the SPIs when an alert is triggered. (**0**)				
4	The organisation has identified and analyzed (internal/external) changes, which may affect established processes and services, taking into consideration changes to nominated post holders. **Weighing**: ➢ Yes (**3**) ➢ Doesn't consider nominated post holders (**2**) ➢ Considers changes to nominated post holders, but doesn't account for external changes. (**1**) ➢ No (**0**)				
5	The organisation has developed and maintains an internal safety investigation process. **Weighing:** ➢ There is a formal internal safety investigation process in place, and a dedicated investigation form is used. Lessons learned and other				

	relevant safety information derived from investigations are distributed within the organisation in a timely manner. Enforcement of non-punitive policy and personal data protection are implemented. (**3**) ➢ There is a formal internal safety investigation process in place, however there is no dedicated investigation form. Lessons learned and other relevant safety information derived from investigations are distributed within the organisation in a timely manner. Enforcement of non-punitive policy and personal data protection are implemented. (**2**) ➢ There is a formal internal safety investigation process in place, however there is no dedicated investigation form. Lessons learned and other relevant safety information derived from investigations are not distributed within the organisation in a timely manner. Enforcement of non-punitive policy and personal data protection are implemented (1) ➢ There is a formal internal safety investigation process in place, however there is no dedicated investigation form. Lessons learned, and other relevant safety information derived from investigations are not distributed within the organisation in a timely manner. Non-punitive policy is not implemented, and/or no protection of personal information and other data not directly related to safety.(**0**)				

6	The organisation has developed a documented process to identify training requirements so that personnel are trained and competent to perform the SMS duties. Check the documentation for SMS training requirements as stated above - manuals include documented SMS duties and responsibilities reflecting the specified personnel as stated in the organisation's training requirements. **Weighing:** ➢ Yes (3) ➢ No (0)				
7	The organisation has communication processes in place that permit the safety management system to function effectively. (Examine in depth the communication of safety and risks within the organisation, look for evidence of formal communication between operational units concerning safety and risks - communication with employees e.g. lessons learned, safety magazines, etc..). **Weighing:** ➢ Clear, well-defined lines of communication exist. Free communications exist between all levels and units. (**3**) ➢ Lines of communication are defined in the system; however, implementation is weak or does not exist (**2)** ➢ Lines of communication are not clear. (**1**)				

	➢ Communication regarding safety and risks does not take place unless forced to - by external reasons. (**0**)				
8	The organisation has adequate measures in place to manage risks associated with crew members' fatigue. **Weighing:** ➢ There is a Fatigue Risk Management System, documented and implemented. (**3)** ➢ There is a scheme for FDP and the organisation has adequate measures in place (documented and implemented) as follows: • There are specific fatigue report procedures and documentation. • There are specific report procedures and documentation for the extension of the flight duty period and reduction of the rest period. • There are dedicated SPIs measuring fatigue/extension of FDP / reduction of rest period. • There is evidence of actions taken regarding received fatigue reports/extension of FDP /reduction of rest period (a change in crew composition – a change in scheduled departure time – offering a layover for a particular flight). (**2)** ➢ There is a scheme for FDP, the organisation has less measures than indicated above. (**1**) ➢ There is a scheme for FDP, with no additional measures. (**0**)				

9	The organisation has developed and maintains an adequate Flight Data Analysis Program (FDAP) as part of its SMS (For aircraft that have a maximum certified takeoff mass above 27,000 kg). **Weighing:** ➢ Roles and responsibilities regarding FDAP are well-defined and documented. Management personnel and flight crew members are well aware of the existence of a FDAP within the organisation and understand its scope, nature, and conditions. There are clear procedures and means to protect personal information as part of the FDAP and de-identified safety critical information is disseminated throughout the organisation. Evidence is in place for amendments to SOPs and/or training as a result of FDAP outputs. (**3**) ➢ Roles and responsibilities regarding FDAP are well-defined and documented. Management personnel and flight crew members are aware of the existence of a FDAP within the organisation, but they don't understand its scope, nature, and conditions. There are clear procedures and means to protect personal information as part of the FDAP and de-identified safety critical information is disseminated throughout the organisation. Evidence is in place for amendments to SOPs and/or training as a result of FDAP outputs. (**2**)				

	➢ Roles and responsibilities regarding FDAP are well-defined and documented. Management personnel and flight crew members are aware of the existence of a FDAP within the organisation but don't understand its scope, nature, and conditions. There are no clear procedures and means to protect personal information as part of the FDAP. Evidence is in place for amendments to SOPs and/or training as a result of FDAP outputs. (**1**) ➢ Roles and responsibilities regarding FDAP are well-defined and documented. Management personnel and flight crew members are aware of the existence of a FDAP within the organisation but don't understand its scope, nature, and conditions. There are no clear procedures and means to protect personal information as part of the FDAP. There is no evidence in place for amendments to SOPs and/or training as a result of FDAP outputs. (**0)**				
10	The organisation ensures the safety level of externally contracted services provided by other organisation s (product and service contracts). **Weighing:** ➢ There is a documented selection process/criteria for the selection of external service providers, taking into consideration the service provider's safety levels. The external contracted service provider				

	is evaluated against such criteria prior to selection. There is a contract or an agreement that includes measurable specifications agreed-upon with the external contracted organisation. There is a documented and implemented process/procedure for periodically monitoring the external contracted service provider to ensure the safety of operations is being fulfilled. There is a communication established with the external contracted service provider for identified hazard and safety risks that are acted upon in a timely manner. (**3**) ➢ There is a documented selection process/criteria for the selection of external service providers, taking into consideration the service provider's safety levels. The external contracted service provider is evaluated against such criteria prior to selection. There is a contract or an agreement but doesn't include measurable specifications agreed-upon with the external contracted organisation. There is a documented and implemented process/procedure for periodically monitoring the external contracted service provider to ensure the safety of operations is being fulfilled. There is a communication established with the external contracted service provider for identified hazard and safety risks, that are acted upon in a timely manner. (**2**) ➢ There are no documented selection process/criteria for the selection of external service providers, taking into consideration the service				

	provider's safety levels. The external contracted service provider is not evaluated against the criteria prior to selection. There is a contract or agreement but doesn't include measurable specifications agreed-upon with the external contracted organisation. There is a documented and implemented process/procedure for periodically monitoring the external contracted service provider to ensure the safety of operations is being fulfilled. There is ineffective communication with the external contracted service provider for identified hazards and safety risks. (**1**) ➢ There are no documented selection process/criteria for the selection of external service providers, taking into consideration the service provider's safety levels. The external contracted service provider is not evaluated against criteria prior to selection. There is a contract or an agreement but doesn't include measurable specifications agreed-upon with the external contracted organisation. There is a documented process/procedure for periodically monitoring the external contracted service provider to ensure the safety of operations is being fulfilled, but there is no evidence of the Implementation of such monitoring procedure, or the evidence provided does not reflect the documented procedure. There is ineffective communication with the external contracted service provider for identified hazard and safety risks (**0**)				

TOTAL					
Sub-total (Area A)					
	B- ORGANISATION				
1	The organisation's personnel have an excellent attitude to all aspects of safety within the organisation. Weighing: ➢ An excellent attitude to all aspects of safety within the organisation. Safety culture is well-embedded and obvious. Just culture is actively promoted (Just culture flow chart or other similar means of charts/process are documented and implemented, and employees have the knowledge about it). (**3)** ➢ Management is proactive in safety matters and there are only minor/occasional lapses. Safety culture is accepted and understood throughout the organisation. A just culture atmosphere is in place. (**2**) ➢ Management takes the initiative in safety and has safety procedures in place. Safety culture is generally understood but there are minor individual lapses where operational 'risk assessment' does take place. (**1**) ➢ Management is reactive, and occasionally takes some initiatives towards implementing policy and procedures to enhance organisational safety, but generally ongoing monitoring is spasmodic. Safety culture is confined to individual initiatives. No operational 'risk assessment' is apparent. **(0**).				

2	The organisation has designed and constructed realistic flight schedules and timetables considering all relevant variables and factors to maintain safe operation of the flight. Check if flight time limitations exceedance, unless Pilot in command's' discretion to extend a flying duty period with the exception of emergencies (serious risk to health or safety). **Weighing:** ➢ No flight time exceedance (3) ➢ Yes, there is flight time exceedance (0)				
3	Key safety management positions have remained. stable for the last 24 months. "Flight Operations Manager, Maintenance Manager, Chief Inspector, Chief Pilot, Training Manager, Safety Manager, and Quality Manager". **Weighing:** ➢ All senior persons have held positions for > 24 months. (**3**) ➢ All senior persons have held positions for > 12 months. (**2**) ➢ One senior person has held a position < 12 months. (**1**) ➢ More than half the senior persons have held their positions < 12 months. (**0**).				

4	Capability of Senior Personnel (experience and qualifications) "Flight Operations Manager, Maintenance Manager, Chief Inspector, Chief Pilot, Training Manager, Safety Manager, and Quality Manager". Check Senior Personnel compliance and response to the agreed upon Corrective Action Plan, with proper implementation on time of the previous audit findings to prevent recurrence. **Weighing**: ➢ Yes (3) ➢ No (0)				
5	Management structure and senior personnel. "Flight Operations Manager, Maintenance Manager, Chief Inspector, Chief Pilot, Training Manager, Safety Manager, and Quality Manager". **Weighing:** ➢ Each senior personnel hold only 1 position. (**3**) ➢ One senior personnel hold 2 positions, all others hold 1 position. (**2**) ➢ More than 1 person holds 2 positions, all others hold 1 position. (**1)** ➢ Any senior personnel holding more than 2 positions. (**0**)				
6	The organisation motivates / reward personnel for their actions towards the organisation, in maintaining safety levels.				

	Weighing: ➢ Yes (3) ➢ No (0)				
7	The organisation is adequately staffed to deal with both normal and abnormal situations. Check rosters, and monthly and annual working hours against time scheme limitations. **Weighing:** ➢ No evidence of being understaffed (3) ➢ Evidence of being understaffed (0).				
8	The organisation is financially healthy. Check for financial stress such as payment delays, reduction of operations, etc. Weighing: ➢ Yes (3) ➢ No (0)				
Total					
Sub-total (Area B)					
C- COMPLIANCE					
1	The organisation accepts regulatory access without question and has an open, cooperative, and transparent attitude. **Weighing:** ➢ Accepts regulatory access without question. Open and transparent. Cooperative and helpful. Accepting				

	comments and recommendations. (**3**) ➢ Accepts regulatory access but periodically questions timing or site. Audits conducted as expected but does not willingly volunteer all information. Open but engages in "gamesmanship". **(2**) ➢ Senior personnel not available. Attempts to postpone audits for no practical reason. Information is provided only when specifically requested. Unwilling to "open up" and only cooperate if it suits. (**1**) ➢ Will not accept free regulatory access to facilities, and personnel. Audits are deliberately avoided. Information is deliberately withheld and not made available. Argumentative, provides false information, obstructive. (**0**)				
2	Challenges to rules. **Weighing:** ➢ The organisation exceeds rules and requirements. Holistic view in viewing rules as for the general good for everyone co-operates to improve rules and complies even if disagrees. (**3**) ➢ The organisation meets minimum rule requirements. Questions rule from a self-interest or industry perspective. (**2**) ➢ The organisation seeks to circumvent rules. Self-interest in rules in order to achieve further				

	economic advantage. Only complies with the rules if it suits. (**1**) ➢ The organisation deliberately breaches rules. Commonly espouses an attitude of perceived license to bend the rules. rules are deliberately flouted and actively campaigned against for economic advantage. (**0**)				
3	The organisation is (IOSA) certified. **Weighing:** ➢ Yes (**3**) ➢ No (**0**).				
4	Oversight results are usually satisfactory, and any finding is analyzed and resolved in a timely manner. Examine the previous audit Non-Compliance Index (NCI) Number of non-conformities to the total number of all audited questions in all areas * 100 **Weighing**: ➢ NCI range (0- 40%) (**3**) ➢ NCI range (41-70%) (**2**) ➢ NCI range (71-90%) (**1**) ➢ NCI range (90-100%) (**0**)				
5	Has the organisation had a clean and positive safety record in the last 5 years? Observe: no record of accidents or serious incidents.				

	Weighing: ➢ Yes (**3**) ➢ No (**0**)				
6	No major sanctions such as AOC suspension, limitation, or restriction have been imposed on the organisation in the last 5 years, (taking into consideration sanctions imposed by DCA or other external entities, such as EASA TCO, etc.). **Weighing:** ➢ No major sanctions were imposed. (**3**) ➢ Major sanctions were imposed. (**0**)				
7	No MEL extensions have been granted to the organisation in the last 24 months. **Weighing:** ➢ Yes (**3**) ➢ No (**0**)				
8	The foreign ramp inspections performed on the organisation are satisfactory. Observe: (no record of CAT 3 findings, no record of foreign-imposed sanctions such as suspensions, limitations, restrictions, etc.) in the previous 6 months. Weighing: ➢ Yes (**3**) ➢ No (**0**)				
Total					
Sub-total (Area C)					
D- TECHNICAL					

1	The organisation has a modern fleet of aircraft. Average (5 to 15) years **Weighing:** ➢ Yes (3) ➢ No (0)				
	The general conditions and maintenance of flight, ground equipment, and tools are considered to be above the minimum industry standards. **Weighing:** ➢ Assets are maintained and considered to be well above the minimum industry standards. Tools/equipment/materials are adequate and correct for the job, and are well maintained, documented, and controlled. No deficiencies were observed. (**3**) ➢ Tools/equipment/materials are adequate, correct for the job, and well maintained. An adequate control system is in place but some discrepancies are noted and being corrected. The aircraft is presentable and there is no evidence to suggest that it has not been properly maintained. (**2**) ➢ Tools/equipment/materials are adequate and appropriate for the job and are maintained. Documentation and control are deficient, (e.g., adequate tools are provided but no tool control/calibration is exercised). Aircraft presentation is less than what may be termed 'desirable' for				

	Air Transport Operations and maintenance is therefore called into question. (**1**) ➢ Essential tools/equipment/materials are not provided, or their condition is such that their use could present a safety hazard. Control systems are significantly deficient. The aircraft condition is dirty, Maintenance is questionable. (**0**)				
3	Multiplicity of aircraft types. **Weighing:** ➢ 1 type of aircraft in operation. (**3**) ➢ 2 to 3 types of aircraft in operation. (**2**) ➢ 4 to 5 types of aircraft in operation. (**1**) ➢ More than 5 types of aircraft in operation. (**0**).				
4	The fleet composition has remained stable for the last 24 months. **Weighing**: ➢ All aircraft have been owned for at least 24 months. (**3**) ➢ Any aircraft has been owned for less than 12 months. (**0)**				
5	All airports served have an adequate level of Rescue and Fire Fighting Services. "The Availability of Rescue and Fire Fighting Services on all airports served (or to be served during on-demand operations) are adequate for the fleet". **Weighing:** ➢ Yes (**3**)				

	➢ No (**0**)				
6	All airports served have a straight- in approach available. **Weighing:** ➢ Yes (3) ➢ No (0).				
7	Technical training is of high quality and effective. Examine the rate of occurrences related to training issues – training failure rate. **Weighing**: ➢ The organisation can show that all the training is effective. (**3**) ➢ The organisation is able to show that ineffective training is the exception. Where training is ineffective it is recognized as such and managed. (**2**) ➢ The organisation is able to show that most of its training is effective. Where training is ineffective it is usually recognized as such and managed. (**1**) ➢ The organisation is not able to show that any training is effective. Ineffective training is not recognized. (**0**).				
8	All aircraft of the same type are mostly identically configured. **Weighing**: ➢ There are no configuration differences among the fleet of the				

	same type, including engines, instruments, equipment, and software. (**3**) ➢ There are minor configuration differences among the fleet of the same type, including engines, instruments, equipment, and software. Differences training is provided to flight crews before they are assigned to fight. (**2**) ➢ There are major configuration differences among the fleet of the same type, including engines, instruments, equipment, and software. Differences training is provided to flight crews before they are assigned to fight. (**1**) ➢ There are minor/major configuration differences among the fleet of the same type, including engines, instruments, equipment, and software. Differences training is not provided to flight crews before they are assigned to fight. (**0**).				
9	The operator continuously invests in new technology and the efficiency of its fleet. "The operator has a continuous fleet modernisation program". **Weighing:** ➢ Yes (**3**) ➢ No (**0**)				
10	The operator adopts the safety improvements proposed by the aircraft manufacturer. "The operator has a procedure to evaluate service bulletins". **Weighing:**				

	➢ The operator has a policy to implement all service bulletins that improve safety whether mandatory or not. (**3**) ➢ The operator has a policy to implement only the mandatory service bulletins that improve safety. (**0**)				
Total					
Sub-total (Area D)					
E- FLIGHT OPERATIONS					
1	➢ The organisation has an effective Upset Prevention and Recovery Training (UPRT) that is compliant with ICAO Doc. 10011. ➢ Observe: rate of actual occurrences related to training issues in the last 6 months – training failure rate – check training records. ➢ **Weighing**: ➢ The organisation can show that all the training is effective. (**3**) ➢ The organisation is able to show that ineffective training is the exception. Where training is ineffective it is recognized as such and managed. (**2**) ➢ The organisation is able to show that most of its training is effective. Where training is ineffective it is usually recognized as such and managed. (**1)** ➢ The organisation is not able to show that any training is effective. Ineffective training is not recognized. (**0**)				
2	The organisation has effective CFIT prevention training in place.				

	Observe: rate of actual occurrences related to training issues in the last 6 months - training failure rate. **Weighing:** ➢ The organisation can show that all the training is effective. (**3)** ➢ The organisation is able to show that ineffective training is the exception. Where training is ineffective it is recognized as such and managed. (**2)** ➢ The organisation is able to show that most of its training is effective. Where training is ineffective it is usually recognized as such and managed. (**1**) ➢ The organisation is not able to show that any training is effective. Ineffective training is not recognized. (**0**)				
3	The organisation has effective ACAS procedures training. Observe: rate of actual occurrences related to training issues in the last 6 months – training failure rate. **Weighing:** ➢ The organisation can show that all the training is effective. (**3**) ➢ The organisation is able to show that ineffective training is the exception. Where training is ineffective it is recognized as such and managed. (**2**) ➢ The organisation is able to show that most of its training is effective. Where training is ineffective it is				

	usually recognized as such and managed. (**1**) ➢ The organisation is not able to show that any training is effective. Ineffective training is not recognized. (**0**)				
4	The organisation has an adequate computerized flight dispatch system to determine aircraft performance and CG position for all phases of flight. Weighing: ➢ Yes (3) ➢ □ No (0)				
5	The operations manual does not allow VFR operations during commercial operations. ➢ Doesn't allow (**3**) ➢ □ Allow (**0**)				
6	Extreme weather operations. The following is considered extreme weather: • Temperature above 40°C, • Temperature below -15°C, • Low visibility requiring Cat II. **Weighing:** ➢ Aircraft are operated in extreme environments. They are suitably crewed and equipped for such operations. All flight crew members received specific training and recurrent/refreshing training. (**3**) ➢ Aircraft are operated in extreme environments. Most flight crew members received specific training and recurrent/refreshing training. (**2**)				

	➢ Aircraft are operated in extreme environments. Some flight crew members received specific training and recurrent/refreshing training. (**1**) ➢ Aircraft are operated in extreme environments. Fight crew members haven't received specific training and/or recurrent/refreshing training. (**0**)				
7	The operations manual does not allow for mixed fleet flying operations. **Weighing**: ➢ Doesn't allow (**3**) ➢ □ Allow (**0**)				
8	The organisation has developed and maintains an adequate Stabilized Approach criteria and procedures. Examine: specific SPI, target, and alert levels of flights continued to land after unstabilised approaches and actions taken. **Weighing:** ➢ Lower rate of un-stabilized approaches that continued to land, current measuring period alert levels not triggered, previous year is within the target. (**3**) ➢ Higher rate of un-stabilized approaches that continued to land, current measuring period alert levels triggered, and actions taken are ineffective, previous year target has been breached. (**0**)				

9	The organisation has a formal Lithium Battery Risk Mitigation policy, procedures, and training. **Weighing**: ➢ Yes (**3**) ➢ □ No (**0**)				
Total					
Sub-total (Area E)					

Areas	**A SM**	**B ORG**	**C COMP**	**D TECH**	**E FLT.OPS**
Sub-total of each					
Grand total of each	**30**	**24**	**24**	**30**	**27**
SPL Rate of each area (Sub / Grand) * 100					

APPENDIX 2
CALCULATION OF ORGANISATIONAL COMPLEXITY LEVEL – OCL

Calculation of Organisational Complexity Level– OCL	Checklist: DCA 19-14-2

Organisation		**DCA Approval No.**	
Auditee name & signature			
Inspector & signature		**Date:**	

No.	Statement	Level of Safety Performance			
		0	1	2	3
1	**Annual flight hours:** **Weighing:** □ less than 4000 (**0**) □ 4000 to 15000 (**1**) □ 15000 to 45000 **(2)** □ More than 45000 **(3)**				
2	**Aircraft numbers:** **Weighing:** □ 3 or less (0) □ 4 to 10 **(1)** □ 11 to 20 **(2)** □ 21 or more **(3)**				

3	**Aircraft type:** **Weighing:** □ 1 Aircraft type **(0)** □ to 3 Aircraft types (**1**) □ 4 to 5 Aircraft types (**2**) □ More than 5 Aircraft types (**3**)				
4	**Destinations served:** **Weighing:** □ 10 or less (**0**) □ 11 to 30 (**1**) □ 31 to 60 (**2)** □ 61 or more (**3**)				
5	**Type of operations/flights:** **Weighing:** □ Domestic (**0**) □ International (Regional) (**1**). □ Domestic and International Regional (**2**) □ Domestic and International Regional / long haul (**3)**				
6	**Average fleet age:** **Weighing** □ Less than 5 years (**0**) □ 5 to 15 years (**1**) □ 15 to 30 years (**2**) □ More than 30 years (**3**)				
7	**Maintenance cover:** **Weighing** □ All destinations have a high level of maintenance cover (0)				

	□ All destinations have some maintenance cover (**1**) □ Only major destinations have maintenance cover (**2**) □ None of the regular destinations have any maintenance cover (*3*)				
8	**Type of carriage: Weighing** □ Cargo (**0**) □ Passenger (**1)** □ Passenger & Cargo general goods (**2**) □ Passenger & Cargo Dangerous Goods (**3**)				
9	**Number of Bases (Locations):** **Weighing** □ 1 (**0)** □ 2 to 3 (**1**) □ 3 to 4 (**2**) □ More than 4 (**3**)				
10	**Type of Engine: Weighing** □ Single Engine (**0**) □ Multi-Engine (Propeller) (**1**) □ Multi-Engine (Jet) (**2**) □ Mixed (any two or more) (**3**)				
Total					
Sub-total of Organisational Complexity Level (OCL)					
Grand total		**30**			
Rate of OCL (Sub / Grand) *100					