BARS V ®
BASIC AVIATION
RISK STANDARD

An International Aviation Safety Program

Safety Assurance for everyone...

About the
BARS Program

'A complete aviation safety program to assist you with the management of aviation risk for your people'

Background

In the past, Resource companies each had their own aviation safety standard and would engage aviation service providers to transport staff to work sites at their own expense. There was no single industry aviation standard to manage their aviation risk. The variety of standards meant that aircraft operators underwent multiple annual audits creating unnecessary burden. There was no formal process by which safety audit results, accident data or safety findings could be shared between the companies or across the resource industry.

In 2010, resource industry giants BHP and Rio Tinto came together and approached the Flight Safety Foundation (FSFL) as an independent, impartial, not-for-profit organization to collaborate in establishing a global aviation safety assessment and audit protocol (The BAR Standard). The 12 founding BARS Member Organizations then worked with the Flight Safety Foundation (FSF) over 12 months to develop the BARS Program and turn it into an award winning International Aviation Safety Program.

Today

The BARS Program Office (BPO) now publish four Standards in five languages, two Implementation Guidelines and delivers a number of training courses.

The BARS Program has grown in membership and expanded from the resource and mining sectors to include government, insurance, commercial, defence and humanitarian organizations who also conduct global aviation activities in remote locations. It is active worldwide, with aircraft operators in contracted aviation services represented throughout every continent. The Audit Program is supported by training elements, data analysis and a suite of aviation Standards covering helicopter external loads, remotely piloted aircraft systems, offshore helicopter operations, night vision goggle operations, emergency medical services operations, aerial geophysical survey activities, aerial mustering and air dropping.

FSFL is a wholly owned subsidiary of the industry-leading voice "Flight Safety Foundation" established in 1947, and are proud to lead the world in continually improving aviation safety.

BARS Member Organizations, Audit Companies and Industry Meetings

Join the BARS Program...
and make a difference

Technical Advisory Committee (TAC)

Benefactors, Tier 1, Tier 2, OGP and Affiliate category members of the BARS Program are invited to a seat at the Technical Advisory Committee Meeting held twice every year; a seat at the table that influences the ongoing development of the BAR Standard and provides access to the collective experience and intelligence of the range of companies within the Program. Never before has there been a forum within the resource sector that allows companies to share knowledge and experience on aviation safety.

The Flight Safety Foundation owns the BARS Program and we host the Standard, however the contents of the Standard are derived from the needs of our members. The TAC presents a collaboration whereby the needs, knowledge and experience of the many stakeholders come together to oversee the content, execution of the BARS Program and expansion of the Standard. This further demonstrates how the governance of the BARS Program is independent, comprehensive and transparent.

TAC Meetings are normally a two-day event held in various international cities with a closed session for the BARS Program Office and TAC members only, followed by an open session where the Audit Companies and the aircraft operators are also invited to attend.

The TAC is chaired by members of the TAC elected for that role. The TAC Charter is updated annually with fresh objectives generated from each meeting.

Companies may join the Program as BARS Member Organizations at a Tier level appropriate to their size and the extent to which they use outsourced aviation support. All BARS memberships include Flight Safety Foundation membership which provides discounts to seminars, access to safety information on key safety issues and initiatives and an opportunity to connect with international industry peers. The levels of BARS membership are:

BARS Benefactor

Benefactors are generally large organizations who are extensive users of outsourced aviation support. In addition to their support for the BARS Program, they also provide support for the broader activities of the Flight Safety Foundation internationally. They have unrestricted access to BARSoft and BARS Audit Reports.

Tier 1

Tier 1 members are those organizations that have mining or other facilities extending across more than one location and typically utilize the services of more than three aircraft operators to provide them with contracted aviation support. They have unrestricted access to BARSoft and BARS Audit Reports.

Tier 2

Tier 2 members are those organizations that have mining or other facilities at one location and typically utilize the services of less than three aircraft operators to provide them with contracted aviation support. Access to BARSoft and BARS Audit Reports is restricted.

BARS Registered Audit Companies

Audit Companies are independent of the BPO, BMO and aircraft operators within the Program. Each is registered by the BPO after satisfying the BPO of their ability to provide the auditing function for the Program and required to meet defined criteria.
The Audit Company pays an annual fee to participate in the Program and the registration is ongoing, providing they meet certain standards and criteria, as laid out in the registration agreement. Only BARS Accredited Auditors working on behalf of an Audit Company are permitted to carry out a BARS Audit. No independent Auditors are permitted within the Program.

Tier OGP

Many OGP organizations have their own aviation safety departments. This category of membership is for these organizations who may wish to supplement their own internal aviation risk oversight by accessing BARS Audit Reports of aircraft operators who provide services to them. OGP resource organizations may choose to become Tier 1 BMOs in their own right.

BARS Affiliate

Is an organization or entity who holds an important but indirect interest in the conduct and safety of contracted aviation operations. A senior representative from a BARS Affiliate is provided ongoing Observer status to the closed and open session of each TAC Meeting. BARS Affiliates are provided access to the data and information created by the BARS Program Office in the form of Finding Data Analysis reports, Safety Alerts, analysis reporting, however the BARS Affiliate will not be provided access to BARSoft, the aircraft operator profile and Audit Reports.

BARS Program Structure

'The BARS Program is a consensus-based industry standard consisting of four components'

1. The Standards	3. Aviation Safety Training Program
2. Audit Program	4. Global Data Analysis Program

The BARS Program provides a cost effective and robust means of monitoring, assessing and analyzing risks associated with your organization's aviation activities.
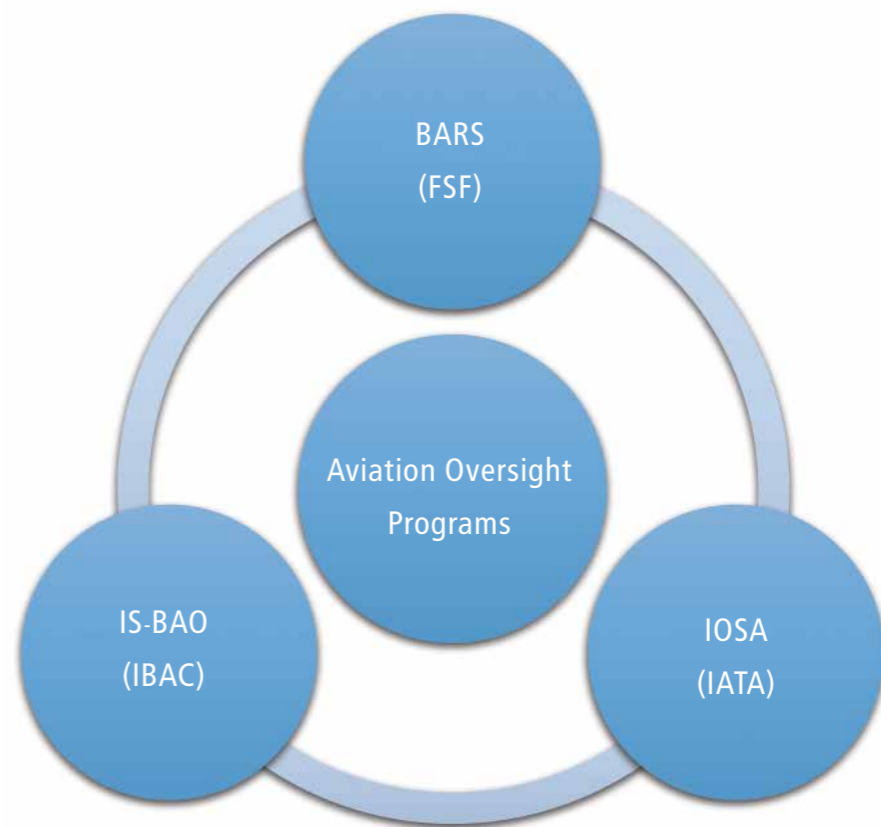
The Program is made up of four components:

1. The Standards – A suite of risk based aviation industry Standards with supporting Implementation Guidelines. All Standards are developed and presented in the Bow-Tie Model for easy understanding and include a set of Controls and Defences for the identified risks;

2. Audit Program – A robust systems based annual audit conducted to the BAR Standard on the aircraft operators; a critical element in providing the end-users with the level of safety assurance required by their respective organizations;

3. Aviation Safety Training Programs – Four types of training courses are available to auditors and operational personnel; and

4. Global Data Analysis Program – A central database to capture and analyze global aviation safety data which is then used to increase awareness of risk to BMOs and operators and provide learnings that drive the development of the BAR Standard and training programs.

The BARS Program requirements supplement, but do not replace, existing national and international regulations. It is based on proven aviation safety principles, tailored to the needs of the resources and allied sectors. The Program uses a risk-based model framed around the actual threats to aviation operations and links these to associated controls, recovery and mitigation measures, as opposed to the outdated prescriptive format previously used by the industry.

Connection with other International Audit programs.

The BARS Program is connected to other international safety oversight programs by fulfilling an increasing requirement by ICAO and regulatory authorities for an industry standard and robust audit program dedicated to the contracted aviation service sector.

In the same way IATA instituted the IOSA Program for the airline sector and IBAC developed the IS-BAO Program for the business/corporate sector, the BARS Program serves the diverse contracted aviation sector. Aviation services under contract can include activities as broad as passenger transport, aerial survey, sling loads for helicopters, offshore helicopters, RPAS and others.

The Program is supported by a set of documents providing guidance to the aircraft operators, Audit Companies, BARS Accredited Auditors, the BPO and other stakeholders. The Standards are developed by the industry and contracting companies and are based around the specific risk these operations face in their day to day aviation activities.

The Standards

1. **The BAR Standard.**

The BAR Standard is the core document behind the BARS Program. The Standard describes in clear detail the risk matrix with threats, controls and defences for the risks associated with aviation operations in support of the BARS Member Organizations and other aviation enterprises that contract their aviation support.

2. **BARS Implementation Guidelines**.

The BARS Implementation Guidelines (BIG) details the practical means by which the Control or Defence can be introduced and also provides examples of good approaches to the practical implementation of the step.

The BIG is a comprehensive document dealing with the risks for onshore passenger and freight transport activities in both fixed and rotary wing aircraft. It also deals with risk management for role specific activities such as helicopter external load, medevac, geophysical activities and night vision goggle operations.

3. **The BAR Standard for Offshore Helicopter Operations** (BARSOHO).

This Standard is presented in a concise, risk-based format to emphasize the relationship between major threats to offshore safety performance requirements, their associated controls and applicable recovery/mitigation measures. It was created in collaboration with the HeliOffshore Safety Performance Model.

4. **BARS for Offshore Helicopter Operations Implementation Guidelines.**

The BARS for Offshore Helicopter Operations Implementation Guidelines (BARSOHO BIG) sets a framework for safety performance goals necessary for safe helicopter operations. It is intended to encourage alternate means of compliance when supported by robust risk assessments that show the safety outcomes can be met using alternative controls.

5. **The BAR Standard for Aerial Mustering**.

This Standard provides companies with minimum requirements for contracted aerial mustering activities and is designed to encourage a risk-based approach to manage the mustering activity.

6. **The BAR Standard for Remotely Piloted Aircraft Systems.**

(BARS for RPAS). This Standard provides companies with minimum requirements for performing risk-based management of the remotely piloted aircraft systems operations that support their activities. The standard is suitable for small and large vehicles and BVLOS operators.

Other Documents

There are a number of key documents used in the operational aspects of the BARS Program. These include:

1. **BARS Program Manual (BPM).**

The BARS Program Manual (BPM) is the prime document that lays out the roles and responsibilities for the stakeholders in the Program. The BPM is managed by the BPO is subject to an annual review.

2. **BARS Auditor Guide (BAG).**

The BARS Auditor Guide (BAG) is the prime document for use by the Auditor in the preparation and conduct of the BARS Audit. It contains information on Audit preparation, checklist management, Audit Report contents and quality control information.

3. **Question Master List (QML).**

The BARS Question Master List (QML) contains all of the questions that may be used in a BARS audit. The QML also provides a cross reference to indicate which questions examine which of the relevant BARS Controls and Defences. Every BARS Audit Checklist generated from BARSoft is drawn from the QML. The QML is regularly updated based upon regular review, revisions to the BAR Standard, quality feedback and stakeholder input.

BARS Updates and Communications
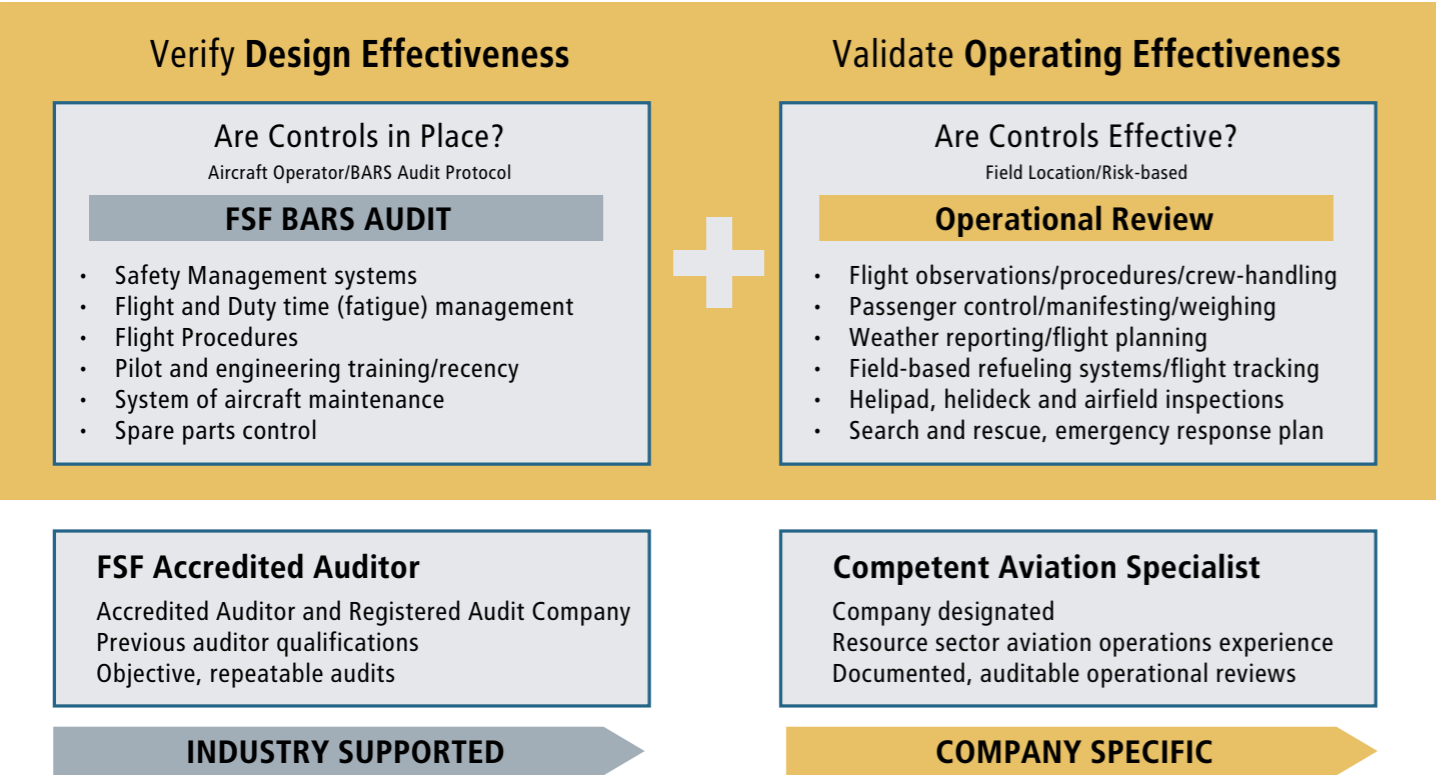
The two principal communication tools are:

BARS E-Newsletter

The BARS Program Office publishes a monthly newsletter that provides updates to key stakeholders and others regarding Program developments.
You can subscribe to the Newsletter via the BARS pages on the FSF website www.flightsafety.org/bars.

BARS Notifications

BARS Notifications [BNs] are the short term or urgent notices to aircraft operators, Audit Companies, BMOs and other stakeholders for the communication of formal changes to the Program. For the aviation minded, these are like NOTAMs for the Program.

2. Audit Program

Verify **Design Effectiveness**

Are Controls in Place?
Aircraft Operator/BARS Audit Protocol

FSF BARS AUDIT

- Safety Management systems
- Flight and Duty time (fatigue) management
- Flight Procedures
- Pilot and engineering training/recency
- System of aircraft maintenance
- Spare parts control

FSF Accredited Auditor

Accredited Auditor and Registered Audit Company
Previous auditor qualifications
Objective, repeatable audits

INDUSTRY SUPPORTED

Validate **Operating Effectiveness**

Are Controls Effective?
Field Location/Risk-based

Operational Review

- Flight observations/procedures/crew-handling
- Passenger control/manifesting/weighing
- Weather reporting/flight planning
- Field-based refueling systems/flight tracking
- Helipad, helideck and airfield inspections
- Search and rescue, emergency response plan

Competent Aviation Specialist

Company designated
Resource sector aviation operations experience
Documented, auditable operational reviews

COMPANY SPECIFIC

Two-dimensional approach to aviation risk management (Reference: FSF BARS Implementation Guidelines document)

The BARS Program utilizes a two-dimensional approach to aviation risk which involves the conduct of a BARS Audit and may include the conduct of an Operational Review. It is an objective and transparent audit of an aircraft operator using FSF trained and accredited Auditors and a defined audit protocol mapped to the BAR Standard.

BARS Audit

A BARS Audit using registered Audit Companies and accredited Auditors provides an evaluation of the operations and technical management systems of an aviation operator. It is an in depth audit with the objective of clearly articulating and verifying what procedures, processes and systems the aircraft operator has in place.

Operational Review

An Operational Review is company specific, and entirely at the discretion of the company using in-house or contracted specialists and is not always required. The Operational Review does not repeat the management systems portion of the BARS Audit, but is a risk-based assessment of the relevant threats to a particular aviation activity. The Operational Review is conducted as a field-based activity to ensure that standards and practices reviewed during the BARS Audit are also embedded into actual operations supporting the resource sector.

BARS Audit Types and Streams

Types of Audit		Types of Designation (Color) (1)	Operational Categories (2)	Monitoring Audit
Initial Audit (including Offshore)	**Comprehensive Renewal Stream** (including Offshore)	Green, Silver and Gold available	Operational Categories available	Monitoring Audit required
	Core Renewal Stream	Green only No Silver or Gold	Operational Categories available	Nil Monitoring Audit
Aerial Work Audit	**Valid for Initial and Renewal**	**Green only No Silver or Gold**	**Limited Categories available**	**Nil Monitoring Audit**
Offshore Audit	**Valid for Initial and Renewal**	**Green, Silver and Gold available**	**Operational Categories available**	**Monitoring Audit required**

(1) See Agreement definitions and section 5 of the BPM for more information.
(2) See BARS Question Master list for more information.

Many BMOs will require aircraft operators which provide services to them to undergo a BARS Audit. Whilst this provides a consistent approach to the application of BARS as a part of the organization's aviation policy, the decision to adopt this is entirely at the discretion of the BMO.

There are currently three audit protocols available under the BARS Program:
1. The first is a BARS Initial Audit which is a minimum two-day, two-person audit undertaken of an aircraft operator. It can include other elements of the BARS operational categories such as helicopter external load operations, medevac and geophysical;
2. The second is a BARS Aerial Work Audit that is conducted on aircraft operators that are not involved in passenger-carrying operations. These can include geo-survey type activities; and
3. The third is a BARS Offshore Audit which is conducted on aircraft operators whose business predominately relates to Offshore Helicopter Operations within oil and gas and windfarm support.

Audit Types

The BARS Program offers two auditing registration streams – Comprehensive and Core. This allows flexibility on audit costs and requirements to better address the diverse assessment needs for aircraft operators.

The Comprehensive Audit stream provides an enhanced level of recognition and evaluation for operators. The Core Audit stream enables aircraft operators to remain in the BARS Program at a reduced level of commitment.

It is essential for an aircraft operator to select the correct audit stream based on the requirements of the BARS Member Organization they are servicing.

It is important to note that the selection of the Audit Company is at the discretion of the aircraft operator. The Audit Companies compete in an open market for the business to audit the aircraft operator. Once an audit has been completed, the aircraft operator owns the Audit Report, and this is made available through BARSoft to BMOs.

BARSoft

BARSoft is a browser based software portal which is an integral part of the BARS Program. It is an application for the management and display of the Audit Program. Accessed by the aircraft operator to enter and update their profile, by the Audit Companies and Auditors to manage and operate their part of the audit and the BMO to access the outcome of the audit; i.e. the Audit Report.

The BMO view is accessed via the BMO Dashboard that provides a world-view of all Registered aircraft operators.

The BMO Dashboard also allows:

· Access to the aircraft operator profile with up to date information;

· Key contacts and post holders;

· Aircraft fleet information;

· Operational base locations and contacts;

· Insurance certificates and accident/incident information are all available to the BMOs; and

· List of recent Audits that have been conducted.
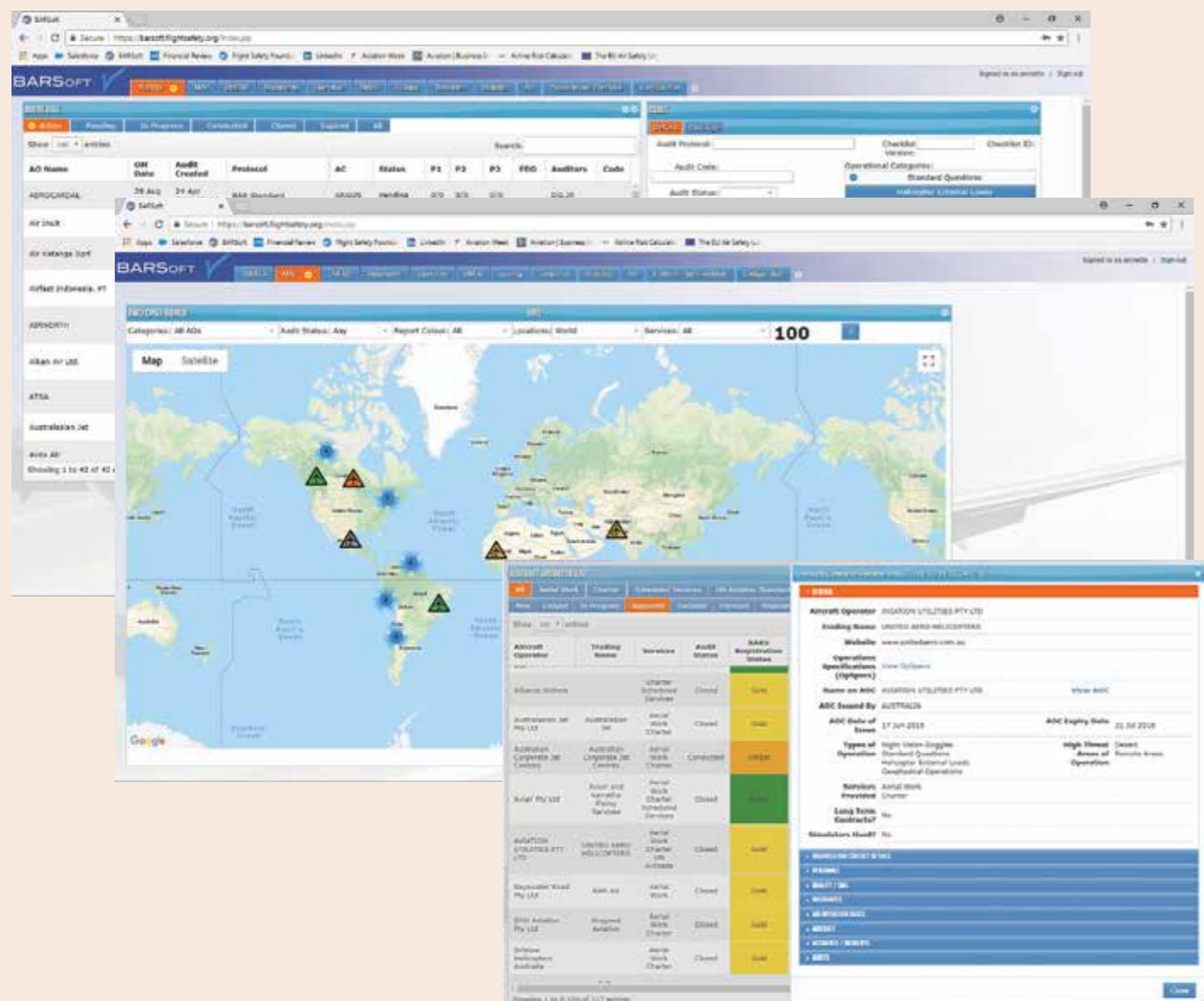
Audit Reports

AMBER

An interim 'Amber' report is issued until all findings have been closed within the required time frame. The Audit Company will work with the aircraft operator who is expected to supply a root cause and corrective action plan to correct and close the findings.

GREEN

A 'Green' report indicates that all findings identified during the audit have been corrected and closed within the allocated time.

SILVER

A 'Silver' report means there has been two consecutive years of BARS Audits conducted and findings closed out within the allocated time frame to maintain continuous registration within the Program. An aircraft operator who achieves this is awarded Silver status on the closure of their second audit.

GOLD

A 'Gold' report means there has been at least three consecutive years of BARS Audits conducted and findings closed out within the allocated time frame to maintain continuous registration within the Program. An aircraft operator who achieves this is awarded Gold status after the closure of their third and subsequent audit.

RED

A 'Red' report indicates that corrective actions have not been closed within an agreed period of time or that P1 findings remain open after the allocated time for closure. The operator is still registered in the Program, however, there are one or more non-conformities that have not been completely addressed.

BARS Accredited Auditor Course (AAC)

A course to provide training to experienced aviation auditors on how to conduct a BARS Audit using the Basic Aviation Risk Standard (BARS) Audit protocol.

The three-day course introduces participants to the elements of the BARS Program including:

• The role of various stakeholders including client, Audit Companies, aircraft operators and other interested parties;

• The BAR Standard, BARS Implementation Guidelines and their interaction with the audit checklist;

• Program documentation;

• Protocols of various types of BARS Audits;

• Audit management including audit planning, follow-up and closure of Audit Reports;

• Use of our dedicated database, BARSoft; and

• Analysis of data derived from the BARS Program.

Aviation Coordinator Training for Onshore Personnel and Offshore Personnel (AVCO)

These are two separate two-day courses that provide participants with an understanding of the Basic Aviation Risk Standard (BARS) and how it can be used by personnel operating in the offshore oil and gas sectors to help identify potential aviation safety risks.

Participants will be able to use knowledge gained on the course to review their companies' aviation management policies and procedures and formulate appropriate risk management strategies to manage identified day-to-day risks.

The course introduces attendees to the Flight Safety Foundation, the basic principles of flight and aviation operations ("Aviation 101") and details the BAR Standard and how it can be used to effectively mitigate risks associated with chartered aviation operations.

Helicopter External Load Operations for Ground Personnel

Helicopter External Load Operations are conducted in many industries across the globe. At present, there is little standardization of procedures, equipment or training. Recognizing the need, the Flight Safety Foundation has developed a course entitled 'Helicopter External Load Operations for Ground Personnel'. The course provides necessary standardization and has been developed to provide basic training for any personnel engaged in activities involving helicopter under-slung loads.

The loads carried by helicopters vary considerably across the respective industries and include, for example, timber and steel used for construction, antennas and oversize equipment such as air-conditioning units and remote site drilling equipment.

This two-day course includes both classroom and practical tuition in the use of equipment. Extensive use of 3D animations, graphics and video makes the course vibrant and easy to understand. It provides a recommended standard in the use of hand signals and color identification of key personnel engaged on site.

The HELO course can also be tailored for all industry sectors that utilize helicopters in similar support roles including firefighting, humanitarian support and flood and famine relief.

'The course helped to give a good overall background to the BAR Standard. I found the 'BARS Implementation Guidelines' extremely helpful.'

The Global Safety Data Analysis Program supports a data-driven approach to aviation safety. The results of this analysis is used to update the BARS Program and provide input into existing aviation safety programs, as well as to identify new opportunities to address safety risks.

The Foundation collects and retains de-identified data in a central database that is subject to further analysis. All trend analysis outputs are communicated to the key stakeholders.

It is purely a statistical data analysis, driven by the audit outcomes. These consist of:

Finding Data Analysis.

Each year, the BPO completes a data analysis on the types and spread of the findings raised in the course of the BARS Audits worldwide. The Finding Data Analysis is a powerful tool for spotting trends and current issues by region and type of operations. This Finding Data Analysis (FDA) is distributed to all BMOs and discussed at the TAC meeting. To date we have completed FDA on specialist areas of Helicopter External Loads, Offshore Helicopter Operations and Geophysical Survey Operations as well as two general worldwide analysis of the data.

Repeat Finding Analysis.

As part of the BPO continuous improvement culture, the Quality Control (QC) review process examines each audit conducted against the BAR Standard. The QC review has identified a number of repeat findings. A repetitive finding is one whereby a non-conformance is identified during an aircraft operator renewal audit, while the same non-conformance was found in a previous audit. Detailed reviews of repetitive findings are carried out, examining both the data and the process in order to identify methods of reducing the number of repetitive findings.

Quality Analysis.

Quality control and assurance data is also analyzed, and helps the BPO and the Audit Companies in the execution of the Program. It identifies strengths and weaknesses in:

· Design effectiveness of questioning and controls;

· Auditing and sampling techniques;

· Integrity of audit close out;

· Conformance with industry best practices;

· Compliance with regulated and legislative requirements;

· Conformance with resource sector basic risk standards; and

· Year on year trends in audit quality.

World Wide Accident Summary.

The BPO collects accident and incident data relating to contracted aviation users focusing on onshore resource and humanitarian sector operations. This is collated and presented on a quarterly basis to the TAC members/BMOs as the World Wide Onshore Accident Summary (WWAS) so they can stay abreast of current issues and trends involving all contracted aviation movements and aligned sector operations.

Safety Alerts and BARS Incident Alerts.

Aviation Safety Alerts are distributed by the BPO and are used to disseminate information of significant nature regarding aviation safety. BARS Incident Alert are distributed by the BPO in situations where the BPO is aware of any accident or serious incident occurring to a BARS registered aircraft operator.

The Program has provided industry sectors with an ongoing level of comfort by improving the safety levels with the aviation operators internationally.

As more audits are conducted the level of data collected has increased, global and sector trends can then be established and used to further improve the Program and systems.

The Program serves to provide a tool to assist in reducing the cost of safety assurance by means of collaboration, cooperation and standardization.

"Upholding the safety BAR above the world average for all our stakeholders by means of audit programs, data analysis and education"

Version 1, October 2018

FLIGHT
SAFETY
FOUNDATION
independent • impartial • international

BARS
BASIC AVIATION
RISK STANDARD
®