



Flight Safety Foundation and the BARS Program

GHAC #10
Sharm el Sheik, Egypt

October 2018



71 years young

Partners

Aviation Safety Network (ASN)

<https://aviation-safety.net/>

Skybrary

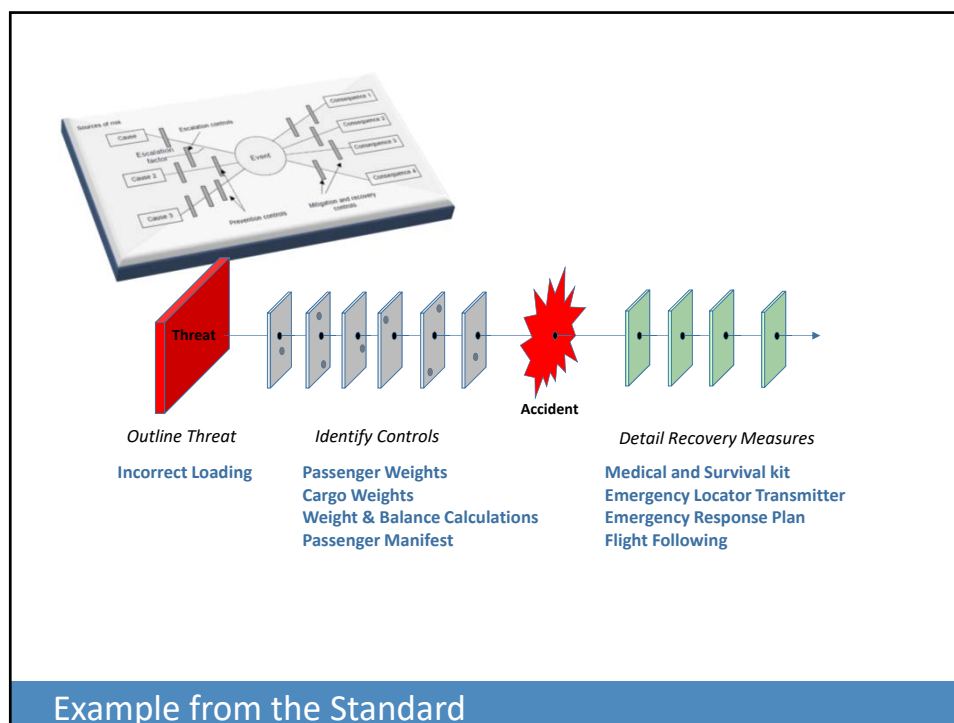
<https://skybrary.aero/>

Aust Aviation Wildlife Hazard Group (AAWHG)

<http://www.aawhg.org/>

Aero Safety World (ASW)

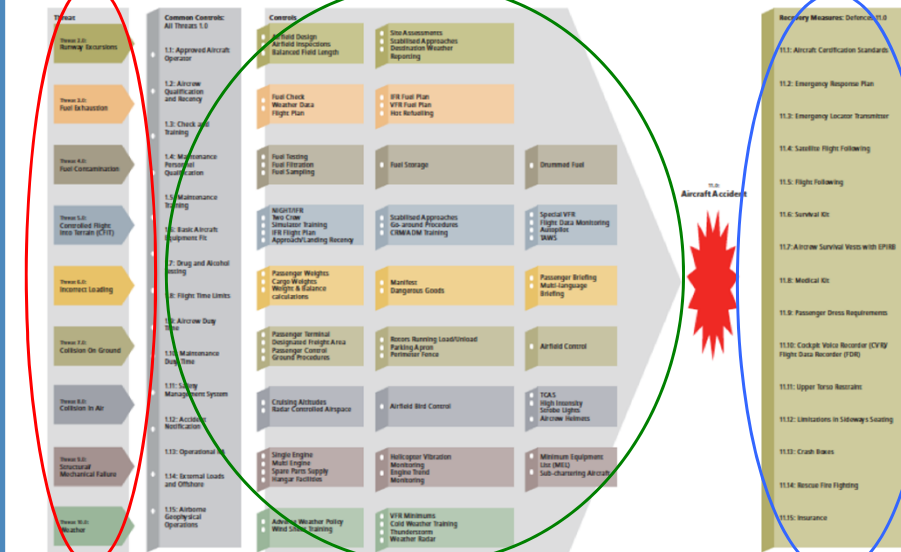
<https://flightsafety.org/aerosafety-world/>



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

BARS Bow-Tie

Figure 1: Scheme of Aviation Risk Management Controls and Recovery Measures



BARS Ver 7 – Safety Goals

Control 20.2: Low Level Light
Ensuring flight crew situational awareness with regard to available fuel reserves.
When available for the aircraft type, a fuel low level warning light must be fitted.

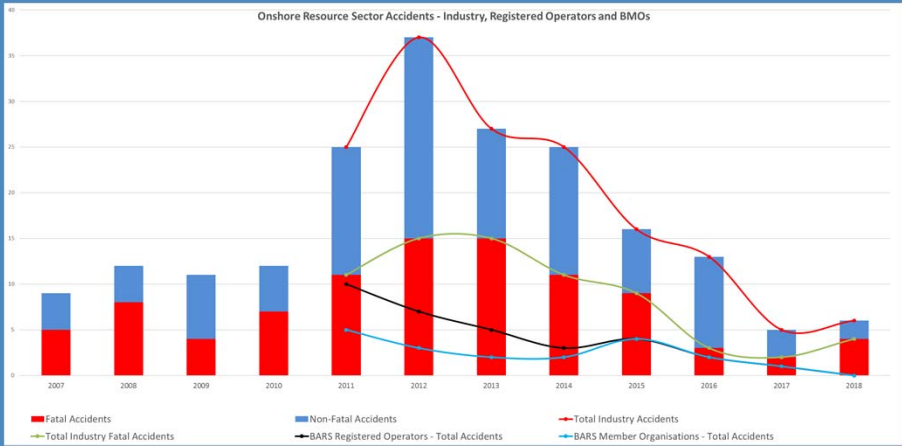
Control 4.5: Drummed Fuel
Ensuring drummed fuel is handled in a manner that will not compromise fuel quality.
Aircraft operators who make use of drummed fuel in the course of their operations must have a procedure in place addressing the management and use of drummed fuel stock. The following performance requirements must be addressed:

Control 4.2.2: Transit Altitude
Eliminating the risks associated with low level operations when low level operations are not necessary.
Transit altitude must be above 500 feet above ground level.

Control 2.2: Night or IFR - Aircraft
Ensuring safety and redundancy for night and IFR flights.
Flights flown at night or under IFR must be conducted by a multi-engine aircraft.

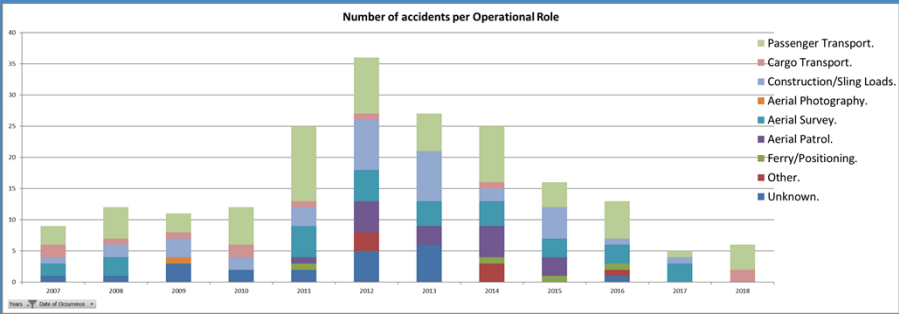
Control 24.1: Weighted Lines
Ensuring helicopter systems cannot be loaded by unweighted lines.
The long-line must be suitably weighted if it is to be flown without a load attached. Equipment pre takeoff checks which are designed to ensure flight crew involved in repetitive loads are aware of when the line is attached.

Onshore Resource Sector Accidents



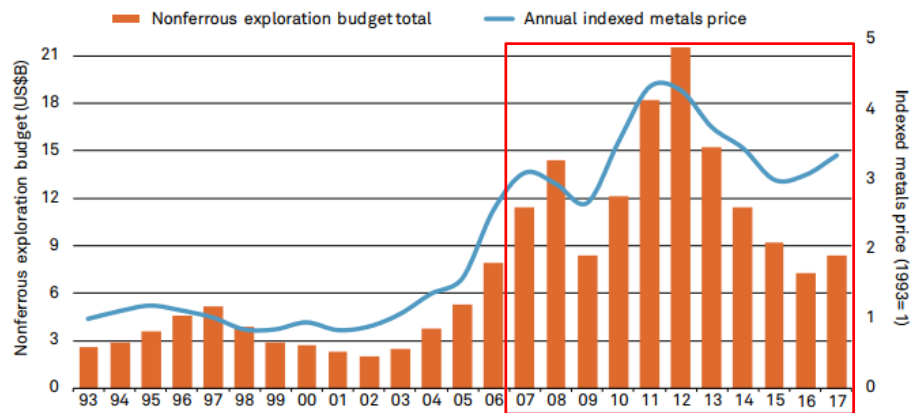
World Wide Accident Stats

Onshore Resource Sector Accidents



World Wide Accident Stats

Global nonferrous exploration budgets



Date as of January 31, 2018.

Source: S&P Global Market Intelligence

Mining Exploration 2006-2017

BARS Safety Alerts (2017-2018)

AVIATION SAFETY ALERT
FOD/Loose Article Hazard

1. Background

Date of Incident:	Ongoing	Aircraft Type:	All
Who this impacts:	Rotary Wing Operators	Operation Type:	Loading and Unloading of cargo/freight and baggage

AVIATION SAFETY ALERT
Unsafe Slingshot Equipment

1. Background

Date of Incident:	Ongoing	Aircraft Type:	Rotary Wing
Who this impacts:	Rotary Wing Operators	Operation Type:	External Load / Geophysical Survey

AVIATION SAFETY ALERT
Operation in Contaminated Environments

1. Background

Date of Incident:	N/A	Aircraft Type:	All types
Who this impacts:	All Operators	Operation Type:	Contaminated Environments

AVIATION SAFETY ALERT
Visual Slope Guidance

1. Background

Date of Incident:	8 th August 2017	Aircraft Type:	ERJ-135
Who this impacts:	Airport Operators, Aircraft Operators	Operation Type:	Passenger Charter

BARS Safety Performance Indicator (SPI) Study

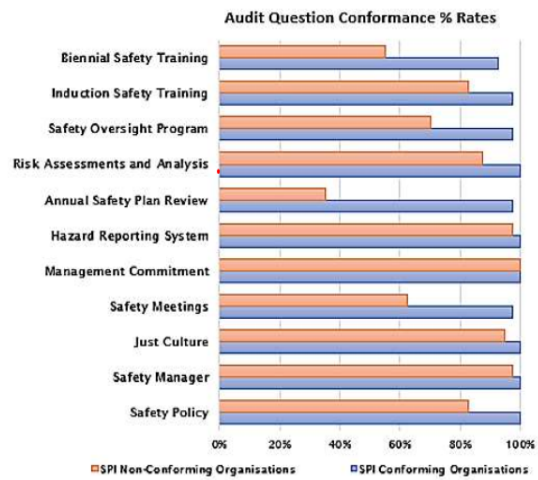


Fig. 1. Audit Question Conformance % Rates

Critical Factors for the Operator under Stage II

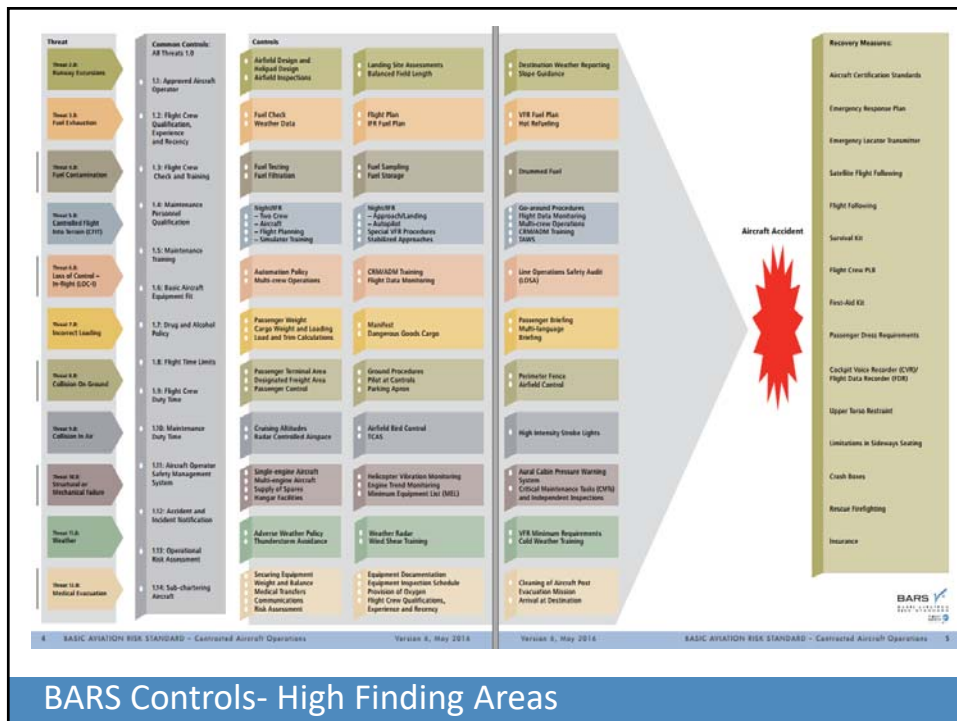
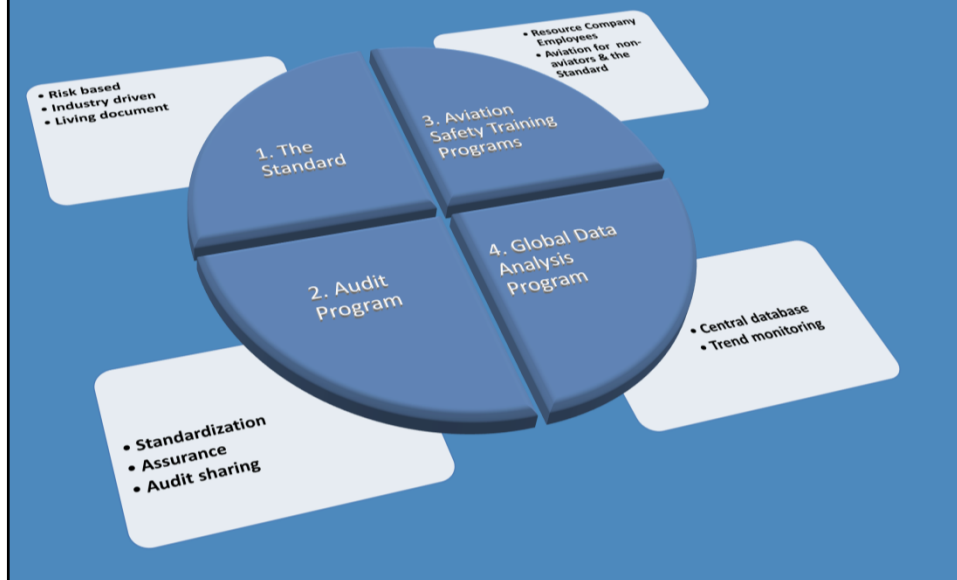
Check the appropriate stream
for your clients

Renewal window is 90 to 30
days prior to expiry

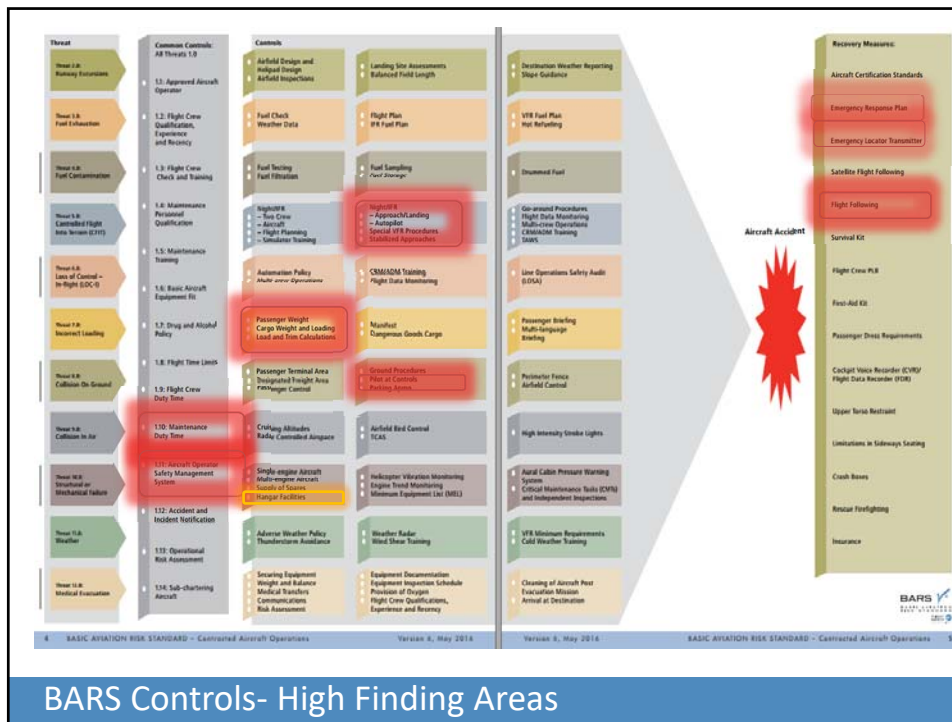
Monitoring audit for the Gold
Operators

Audit questions have stronger
emphasis on implementation and
systematic approach to safety

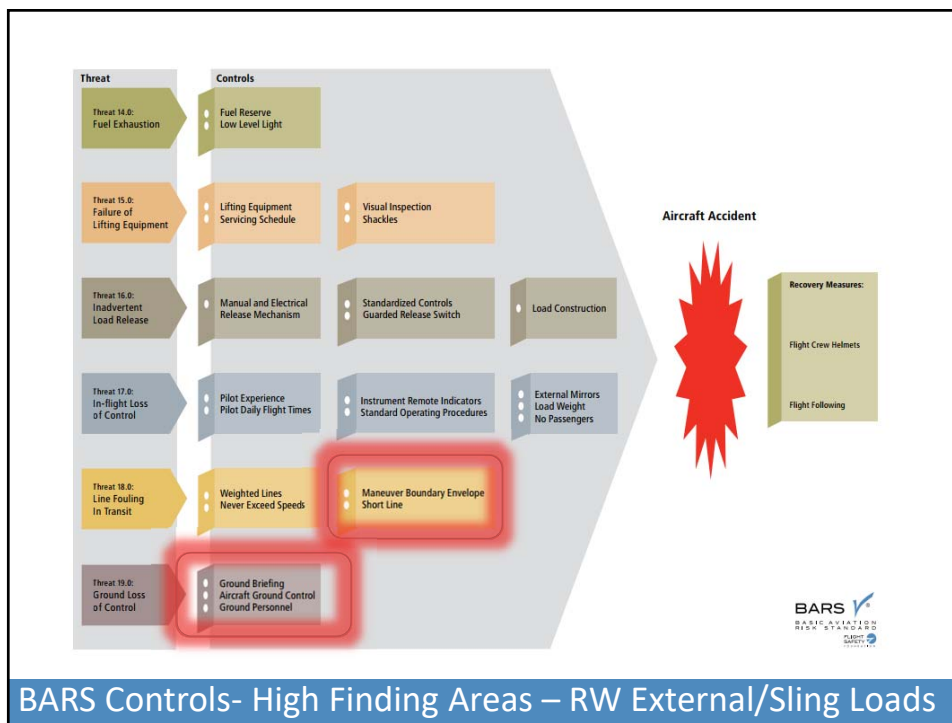
Components of the BARS Program



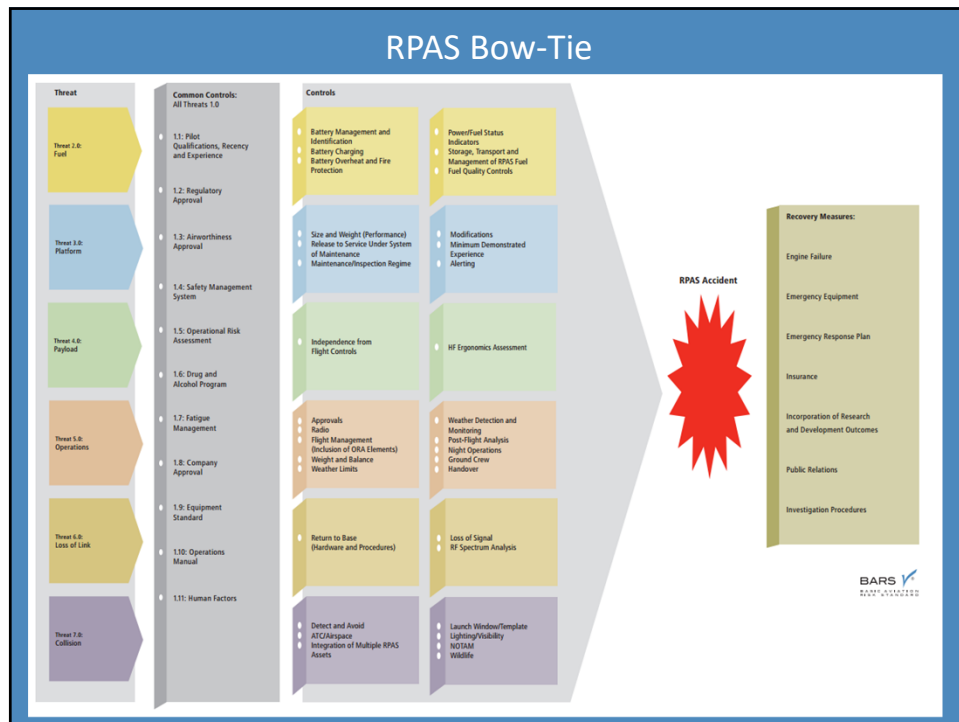
BARS Controls- High Finding Areas

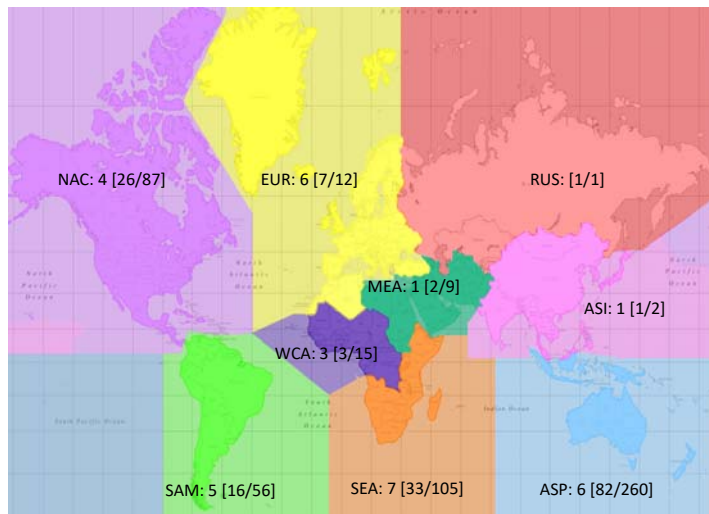


BARS Controls- High Finding Areas



BARS Controls- High Finding Areas – RW External/Sling Loads

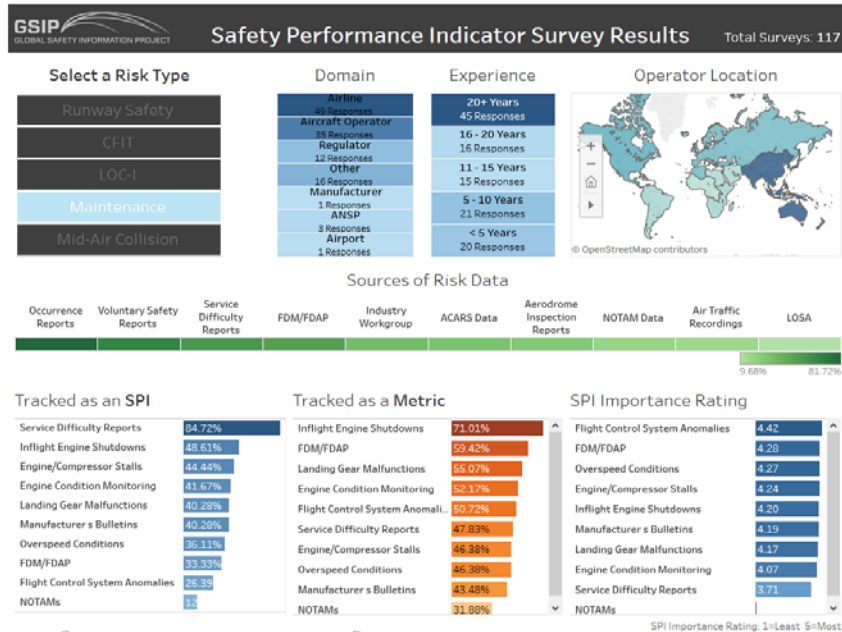




Geographic Spread
(Countries: [#Operators/#Audits])

* As at 01 Aug 2018

BARS Geographic Performance

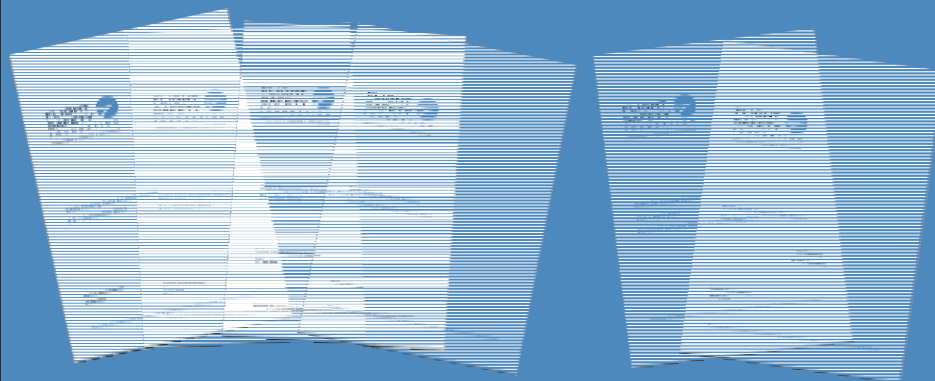


GSIP SPI Survey

The BARS Suite



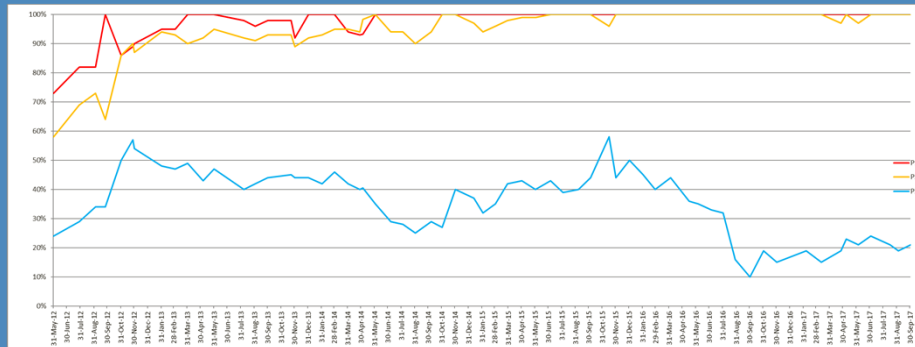
Program Output – Reports and Analysis



Data Analysis Reports

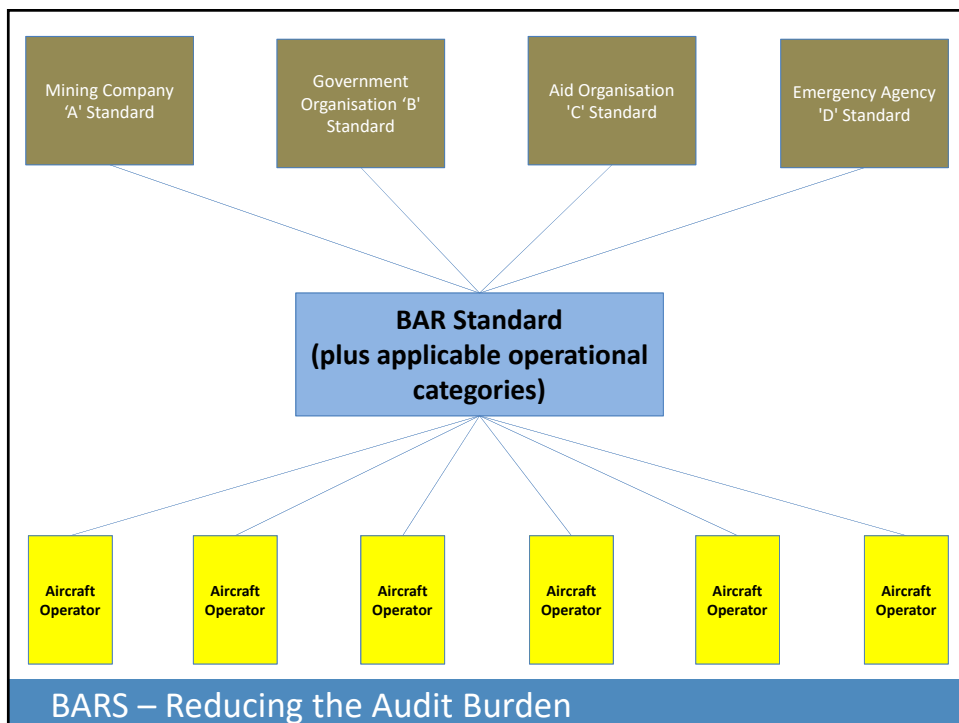
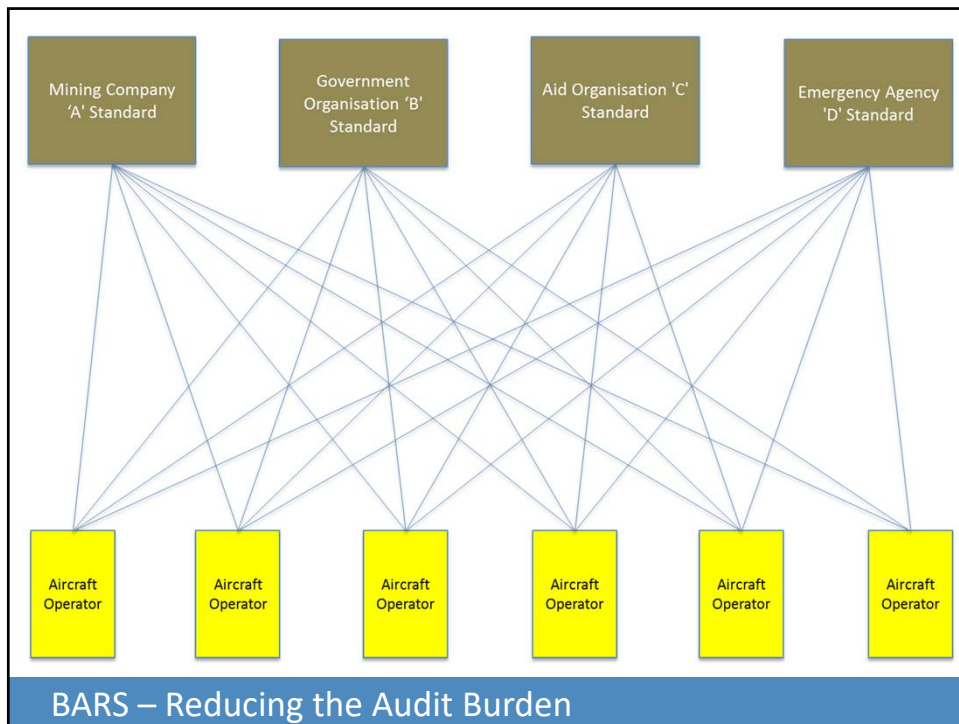
Quality Reports (QA/QC)

BARS Success Measurement

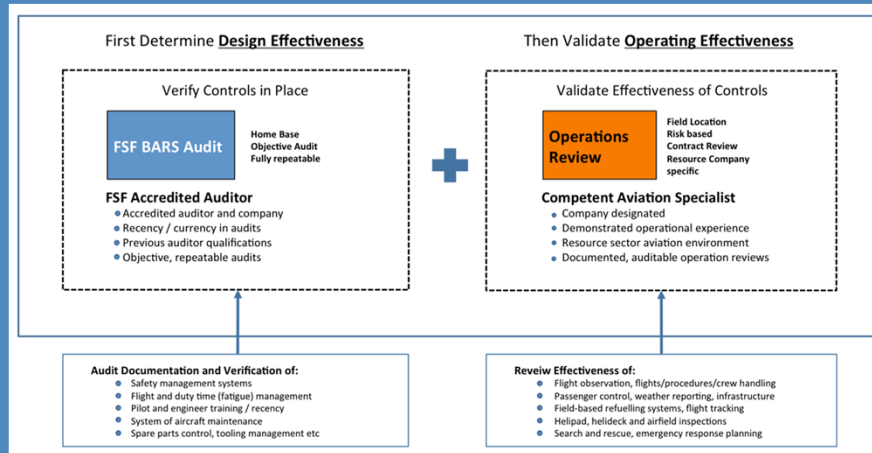


Close Out Rate Performance





2 Dimensional Model



Audit vs Operational Effectiveness

BARS Audit Questions

		BARS Audit Question		Operational Categories	BARS Standard Mapping	ICAO/Source Mapping
P	Ref					
P2	FLT 1.07.03	The Operator should ensure IFR fuel load calculations include fuel for start-up, taxi, en route, approach and transit to an alternate destination (if required). [BC3.4]		Std	3.4	A6 P1 4.3.6.3 A6 P3 S2 2.3.6.4
P2	FLT 1.07.04	The Operator should ensure IFR fuel load calculations include a variable reserve of 10% of total trip fuel. [BC3.4] A P2V is available for this question. See the latest P2V BARS Notification for further information.		Std	3.4	A6 P1 4.3.6.3 A6 P3 S2 2.3.6.3.1
P2	FLT 1.07.05	The Operator should ensure IFR fuel load calculations include 30 minutes fixed reserve. [BC3.4]		Std	3.4	A6 P1 4.3.6.3 A6 P3 S2 2.3.6.3.1
P2	FLT 1.07.06	The Operator should ensure the minimum fuel carried on any VFR flight plan meets the responsible regulatory authority requirements. [BC3.5]		Std	3.5	A6 P1 4.3.6.3 A6 P3 S2 2.3.6.2
P2	FLT 1.07.07	The Operator should ensure VFR fuel load calculations include a 30 minute fixed reserve and a variable reserve equal to 10% of trip fuel. [BC3.5] A P2V is available for this question. See the latest P2V BARS Notification for further information.		Std	3.5	A6 P1 4.3.6.3 A6 P3 S2 2.3.6.2
	FLT 1.08	AIRCRAFT FUEL CHECKS				
P2	FLT 1.08.01	The Operator should have a procedure to ensure that fuel supplied to an aircraft is tested utilizing water detection capsules or equivalent. The PIC should ensure the quality of the fuel is acceptable for the operation of the aircraft. [BC4.1]		Std	4.1	

Safety Alerts

AVIATION SAFETY ALERT AIRCRAFT ELT INSTALLATIONS



1. Background

Date of Incident: Various Aircraft Type: Various
Who this impacts: All aircraft operators Operation Type: All aviation operations

2. Details

A number of Emergency Locator Transmitters (ELTs) have failed to transmit distress signals after an aircraft crash. Several of the accidents reviewed (both aeroplanes and helicopters) were supporting the resource sector. The absence of ELT signals to Search and Rescue (SAR) aircraft and satellite receivers resulted in the delayed discovery of the accident sites and rescue and recovery of personnel.

In most cases the ELT units were either displaced from the mounting (including detachment of the transmitting antenna), burnt out or disabled by wreckage preventing the ELT from performing to design standard. The intent of the ELT design is for the crash forces to automatically activate the transmitter which then transmits an emergency radio signal containing the identification and location of the accident aircraft to SAR organisations. These transmissions are a key component in the location and rescue of personnel once an accident has occurred.

In response to this issue, the US National Transportation Safety Board (NTSB) has previously provided the US Federal Aviation Administration (FAA) with [Safety Recommendation A-10-186](#), requiring a detailed inspection of an aircraft's ELT to ensure it is mounted correctly and in accordance with manufacturer's specifications. The recurring failure of the ELT as a critical control in mitigating the consequence of an aircraft accident means it is imperative that alternate mitigating controls (such as flight following) are considered and implemented.

3. Major Root Causes

In addition to ELT failure caused by crash forces greater than the design standard experienced in an accident, three other possible failure modes can be considered: (1) Incorrect installation of the ELT, (2) loosening of the ELT retention strap during normal operations; and (3) ELT unserviceable prior to the accident.

4. Recommendations

Contracted aviation service providers should be encouraged to:

- Ensure aircraft ELTs are mounted and retained in accordance with the manufacturer's specification [\(NTSB A-10-186\)](#) during annual inspection; and
- Review alternate controls associated with identifying downed aircraft such as satellite flight following or scheduled radio calls in accordance with [Flight Safety Foundation BARS 11.4, 11.9 and 20.13](#)

Aviation Safety Alert Number 003

BARS Incident Alert 13-01



Tropic Air C208 Caravan - Accident

1. Background

Date of Incident: 23 Nov 2013 Location: Gulf Province Papua New Guinea
Aircraft Type: C208 Cessna Caravan Operator: Tropic Air
Role: Passenger Transport

2. Details

The single engine Cessna Caravan operated by Tropicair crashed into a river while flying from Koro to Poreto in OCE province yesterday afternoon.

The Accident Investigation Commission says 10 people were on board and seven survived.¹⁰

3. References

- (1) <http://www.safetydata.net/web/home/web.php?ref=13-001>, accessed 28 Nov 2013.
- (2) <http://www.abc.net.au/news/2013/11/28/ten-kill-in-papua-new-guinea-crash/5117986>, accessed 28 Nov 2013.
- (3) <http://www.oriental.com.au/news/60116>, accessed 27 Nov 2013.

BARS contact details
+61 3 9300 3517 / +61 3 9300 6450
bars@flightafety.org

Incident Alert 13-01

This document has been created from publicly available data and is provided as a notification to BARS in relation to BARS Registered Aircraft Operators.

Page 1 of 1

BARS 13-01 Tropic Air

Standardised Contract Templates

ATTACHMENT TO COMMERCIAL AGREEMENT

SCOPE OF SERVICES - FIXED WING/HELICOPTER AVIATION SERVICE

1. GENERAL

1.1 Safety Standards

Contractor has adopted or will adopt safety standards, which meet or exceed all applicable requirements contained within the latest version of the Flight Safety Foundation (FSF) Basic Aviation Risk Standard and any additional Company safety standards or requirements as set forth herein.

All queries regarding applicability of the latest version of BARS requirements are to be, stated by Contractor to Company in writing prior to the commencement of Service, or as soon as an issue of potential non-compliance is identified whichever occurs first.

It is expressly understood that the performance of the Service shall not vary from the standards and requirements set forth in this Agreement and any associated Commercial Agreements and/or Orders absent the express, written approval of the Company.

Contractor will work with Company to develop Emergency Response Plans appropriate to the Service (see BARS Control 11.2). Details of the Contractor's Safety Management System shall be provided on request to the Company.

Contractor will provide the Company, on request, evidence of any regulatory approvals necessary for delivery of the Service (see BARS Control 1.1).

1.2 BARS Audit Currency

Contractor will remain at its own cost current FSF BARS registration during the primary term of the Contract and any additional agreed periods. Contractor must further provide confirmation of BARS audit renewal to the Company Representative no later than 90 days prior to the expiration date of any current BARS registration over the duration of the contract.

1.3 Incident, Accident and Non-Standard Occurrence Notification

Contractor must advise the Company Representative of any incident, accident or non-standard occurrence related to the Service provided to the Company that has, or potentially has, disrupted operations or jeopardised safety (see BARS Control 1.12).

Contractor must verbally notify the Company as soon as practicable but in writing no later than 24 hours after becoming aware of the event.

Other than to the extent required by the Flight Safety Foundation BARS Program rules and local aviation regulations, Contractor must not disclose details of any aviation related incident involving company personnel to any third parties without the prior written permission of the Company. If the Contractor is required by law to notify a third party of the incident, it must:

- Inform the Company of the disclosure it intends to make; and
- Provide the Company with a copy of any written report or statement it provides to third party.

ATTN 2

Fixed Wing/Helo - General

ATTACHMENT TO COMMERCIAL AGREEMENT

SCOPE OF SERVICES - HELICOPTER EXTERNAL LOAD

1. GENERAL

1.1 Safety Standards

Contractor has adopted or will adopt safety standards, which meet or exceed all applicable requirements contained within the latest version of the Flight Safety Foundation (FSF) Basic Aviation Risk Standard and any additional Company safety standards or requirements as set forth herein.

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ATTN 2

RW – External Loads

BAR Standard and BARS Implementation Guidelines



BARS Critical Controls

Critical Control Performance - Fuel Rates of non-conformity

