



AFI Comprehensive implementation programme

International Civil Aviation Organization AFI Comprehensive Implementation Programme (ACIP)

ICAO Regional Workshop on State Safety Programme (SSP) Implementation

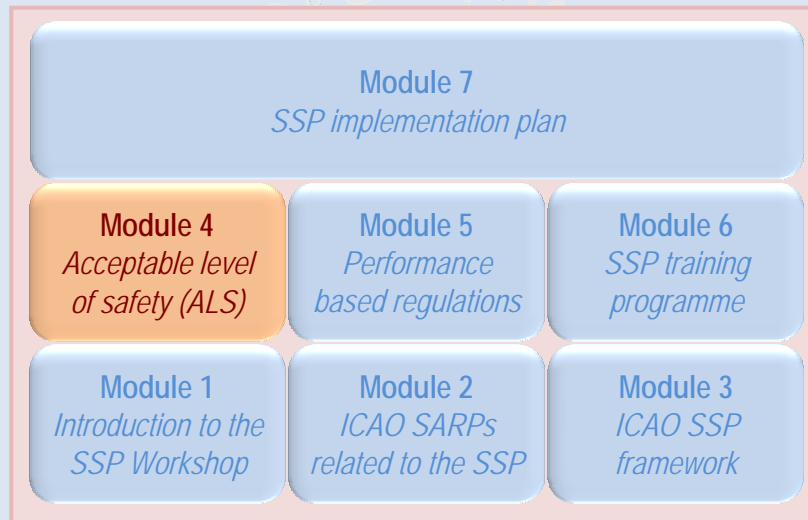
Module 4 – Acceptable level of safety (ALS)

Original

ICAO State Safety Programme (SSP) Implementation Workshop

01/07/08

SSP – A structured approach



Module N° 4

ICAO State Safety Programme (SSP) Implementation Workshop

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Objective

- ❖ Describe the concepts and metrics underlying the acceptable levels of safety (ALS) of an SSP or an SMS.

Contents

- ❖ Performance-based regulatory environment
- ❖ Safety performance measurement
- ❖ Acceptable levels of safety (ALS)
- ❖ Definitions
- ❖ Regulatory compliance
- ❖ Legal considerations
- ❖ Summary
- ❖ Points to remember



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As of 23 November 2006

- ❖ States shall establish a **safety programme (SSP)**, in order to achieve an **acceptable level of safety (ALS)** in:
 - The operation of aircraft
 - The maintenance of aircraft
 - The provision of air traffic services
 - Aerodrome operations

Two different concepts

- ❖ **Safety measurement**
 - Addresses high-level outcomes:
 - Ex. fatal accident rate per million departures
- ❖ **Safety performance measurement**
 - Addresses lower level outcomes and most frequently processes:
 - One bird strike/1000 aircraft movements for the current year with a 20% reduction in two years.
- ❖ The establishment of acceptable levels of safety is **exclusively** concerned with safety **performance** measurement.



Performance-based regulatory environment

- ❖ The notion of acceptable levels of safety is an **essential ingredient** of the effective operation of both SSP and SMS.
- ❖ ALS support a **performance-based regulatory environment**, through the monitoring of the actual performance of an SSP or SMS (*prescriptive versus performance regulations are discussed in Module 5*).
 - **Basic management axiom**
 - *"One cannot manage what one cannot measure".*

Safety performance measurement

- ❖ A set of **measurable performance outcomes** is necessary to determine whether an SSP or an SMS is operating in accordance with implementation expectations.
- ❖ Measurable performance outcomes permit to assess the **actual performance of activities critical to safety** against **existing organizational controls** so that:
 - safety risks can be maintained under control; and
 - necessary corrective or preventive action can be taken.



Safety performance measurement

- ❖ Only through **assurance of effective safety operational performance** of the SSP or the SMS – through the establishment and measurement of specific safety performance outcomes – can the objective of **continuous improvement of safety** underlying safety management be achieved.

Acceptable levels of safety (ALS)

- ❖ ALS expresses the **safety goals** (or expectations) of a State.
- ❖ Provides **objective evidence** for measuring safety performance of an SSP or an SMS while the organization conducts its core business functions.
- ❖ It is a **reference** against which the State can measure safety performance.
- ❖ When establishing ALS, consideration must be given to the **level of safety risk** that applies, the **cost/benefits** of improvements to the system, and the **public expectations** on safety of air travel.



Acceptable level of safety (ALS)

❖ The ALS to be achieved shall be established by the State and it is expressed in practical terms by two measures or metrics:

➤ *Safety performance indicators*

➤ *Safety performance targets*

❖ It is delivered through various tools and means:

➤ *Safety requirements.*

Definitions

❖ **Safety performance indicators**

➤ Safety performance indicators are the **short term**, objectives of an SSP or an SMS. They must be expressed in numerical terms, so that they can be measured.

❖ **Safety performance targets**

➤ Safety performance targets are **medium and long term** objectives of an SSP or an SMS. They must be expressed in numerical terms, so that they can be measured.

Definitions

❖ Safety requirements

- Safety requirements are operational procedures, technology and systems, programmes, contingency arrangements and so forth necessary to achieve the safety performance indicators and targets of the acceptable level of safety of an SMS. Measures of reliability, availability and/or accuracy may be added.

Acceptable levels of safety – SMS

Safety requirements

1. Training course for drivers / installation of specific signage
2. Thrice-daily walk-in ramp inspection programme
3. ...

Safety performance targets

1. Maintain no more than 20 events of unauthorized vehicles on the taxiways per 10,000 operations
2. By January 2009 reduce to 8 FOD events on the apron per 10,000 operations
3. ...

Safety performance indicators

1. 20 events of unauthorized vehicles on the taxiways per 10,000 operations
2. 15 FOD events on the apron per 10,000 operations
3. ...

Service provider

Will comply all applicable national and international standards

Acceptable levels of safety – SSP

Safety requirements

1. Installation of ASDE/X in 5 international airports
2. Video on ground de-icing / revision of the circular on in-flight icing / briefings on pitot tube ice formation and use of de-icing boots
3. ...

Safety performance targets

1. By 2010 reduce runway incursions to 0.5 per 100.000 operations
2. By 2009 reduce in-flight loss of control events due to ice accumulation to 2 per 1.000 operations
3. ...

Safety performance indicators

1. 0.8 runway incursions per 100.000 operations
2. 4 in-flight loss of control events due to ice accumulation per 1.000 operations
3. ...

State

Will comply all applicable international standards

Acceptable levels of safety (ALS)

- ❖ There will never be a **single** or **national** ALS.
- ❖ Within each State, **different ALS will be separately agreed** between the oversight authority and individual operators/services providers.
- ❖ Each agreed ALS should be commensurate to the:
 - **complexity** of individual services provider specific operational context
 - **availability** of services provider **resources** to address them.



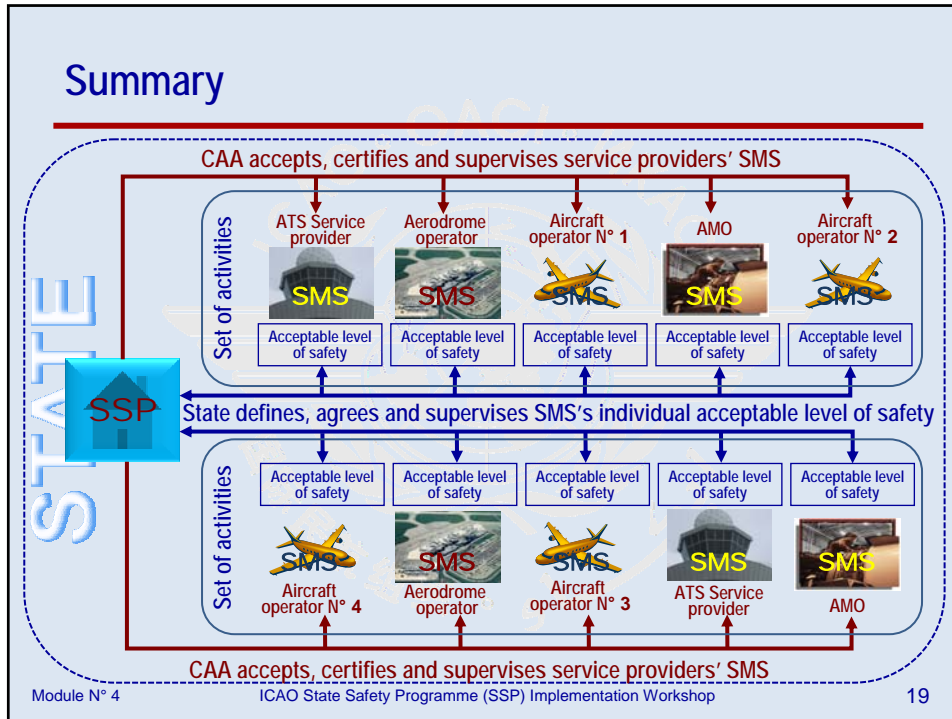
Regulatory compliance

- ❖ The safety performance indicators and safety performance targets of an ALS provide a **measurable way of ensuring and demonstrating the effectiveness of an SSP or an SMS**, beyond regulatory compliance.
- ❖ **Regulatory compliance** still remains at the foundations of safety management.

Legal considerations

- ❖ Establishing ALS does not replace legal, regulatory, or other already established requirements, but it **must support compliance with them**.
- ❖ Establishing ALS under the State SSP **leaves unaffected the obligations of States**, and does not relieve States from compliance with international SARPs.

Summary



Points to remember

- ❖ *Performance-based regulatory environment*
- ❖ *SSP and SMS performance measurement*
- ❖ *Acceptable level of safety (ALS)*
- ❖ Establishing ALS does not replace legal, regulatory, or other already established requirements



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