

# SOP

## **SPO.OP.230**

### **Operativa standardförfaranden**

a) Innan en specialiserad flygverksamhet påbörjas ska operatören göra en **riskbedömning**

där verksamhetens komplexitet bedöms för att fastställa de


**inneboende farorna och riskerna**

samt

**riskreducerande åtgärder.**


# ORO.GEN.200 Ledningssystem

**identifiering av faror**  
för flygsäkerheten som operatörens  
verksamhet medför och  
**hantering av**  
därmed förbundna  
**risker,**  
Inklusive de  
**åtgärder**  
som vidtas för att  
**minska risken**  
och  
**kontrollera**  
att dessa åtgärder är effektiva



b) **Operatören ska på grundval av riskbedömningen fastställa operativa standardförfaranden (SOP)** som är lämpade för den specialiserade verksamheten och det luftfartyg som ska användas, med beaktande av kraven i kapitel E (*HESLO; farligt gods; HEC*).

SOP ska ingå i drifthandboken eller vara ett separat dokument. SOP ska regelbundet ses över och uppdateras vid behov.

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- c) Operatören ska säkerställa att specialiserad flygverksamhet genomförs i enlighet med SOP.

# Riskbedömning

## Fara – Hazard

Definition: *Tillstånd, omständighet eller föremål, objekt som utgör en potentiell möjlighet att förorsaka död, personskador, materiella skador, materielförlust eller nedsättning av förmågan att utföra en uppgift.*

Särskilj mellan **fara** och de **mänskliga misstag** som beror på begränsningar i vår förmåga. Hänsyn till dessa ska alltid finnas med och hanteras (**HF**).

# Riskbedömning

## **(Säkerhets-) Risk**

Definition: *Sannolikhet och allvarlighetsgrad av konsekvenser eller utfall från en existerande fara eller situation.*

# Riskbedömning

Säkerhetsriskprocessen inleds med att bedöma **sannolikheten av de konsekvenser** som de identifierade farorna kan medföra.

Kan uttryckas i sannolikhet och frekvens.

Sannolikheten kan sedan sättas in i en tabell där sannolikheten graderas från frekvent till extremt osannolikt och ges ett värde från högt till lågt.

# Exempel från ICAO Safety Management Manual (SMM)

Likelihood	Meaning	Value
<b>Frequent</b>	Likely to occur many times (has occurred frequently)	<b>5</b>
<b>Occasional</b>	Likely to occur sometimes (has occurred infrequently)	<b>4</b>
<b>Remote</b>	Unlikely to occur, but possible (has occurred rarely)	<b>3</b>
<b>Improbable</b>	Very unlikely to occur (not known to have occurred)	<b>2</b>
<b>Extremely improbable</b>	Almost inconceivable that the event will occur	<b>1</b>




# Riskbedömning

När sannolikhetsbedömningen är klar utvärderas **allvarlighetsgraden** av de potentiella konsekvenserna relaterade till faran.

En tabell upprättas som visar allvarlighetsgraden från katastrofal till negligerbar och med ett värde kopplat till de olika graderna.

# Exempel från ICAO Safety Management Manual (SMM)

Severity	Meaning	Value
<b>Catastrophic</b>	<ul style="list-style-type: none"><li>— Equipment destroyed</li><li>— Multiple deaths</li></ul>	<b>A</b>
<b>Hazardous</b>	<ul style="list-style-type: none"><li>— A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely</li><li>— Serious injury</li><li>— Major equipment damage</li></ul>	<b>B</b>
<b>Major</b>	<ul style="list-style-type: none"><li>— A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency</li><li>— Serious incident</li><li>— Injury to persons</li></ul>	<b>C</b>
<b>Minor</b>	<ul style="list-style-type: none"><li>— Nuisance</li><li>— Operating limitations</li><li>— Use of emergency procedures</li><li>— Minor incident</li></ul>	<b>D</b>
<b>Negligible</b>	<ul style="list-style-type: none"><li>— Little consequences</li></ul>	<b>E</b>



Genom att kombinera dessa tabeller i en matris skapas ett hjälpmedel till att fastställa ett säkerhetsriskindex.

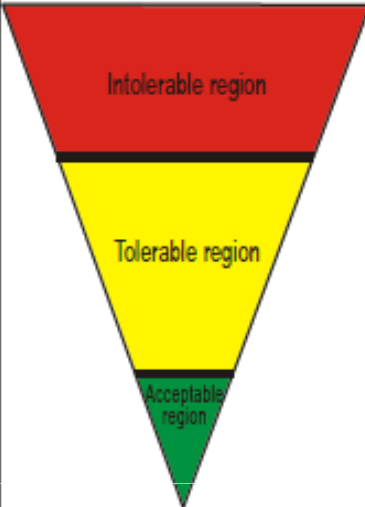
Dessa index kan föras över och sammanställas i en matris som visar om en risk är acceptabel eller inte.

Matriserna kan se olika ut och ska anpassas till komplexiteten i bedömningarna.

# Exempel från ICAO Safety Management Manual (SMM)

Risk probability	Risk severity				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	<b>5A</b>	<b>5B</b>	<b>5C</b>	<b>5D</b>	<b>5E</b>
Occasional 4	<b>4A</b>	<b>4B</b>	<b>4C</b>	<b>4D</b>	<b>4E</b>
Remote 3	<b>3A</b>	<b>3B</b>	<b>3C</b>	<b>3D</b>	<b>3E</b>
Improbable 2	<b>2A</b>	<b>2B</b>	<b>2C</b>	<b>2D</b>	<b>2E</b>
Extremely improbable 1	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>1D</b>	<b>1E</b>

# Exempel från ICAO Safety Management Manual (SMM)

Suggested criteria	Assessment risk index	Suggested criteria
	<b>5A, 5B, 5C, 4A, 4B, 3A</b>	Unacceptable under the existing circumstances
	5D, 5E, 4C, 4D 4E, 3B, 3C, 3D 2A, 2B, 2C, 1A . . .	Acceptable based on risk mitigation. It may require management decision.
	3E, 2D, 2E 1B, 1C, 1D, 1E	Acceptable

Risk Index Range	Description	Recommended Action
<b>5A, 5B, 5C, 4A, 4B, 3A</b>	HIGH Risk	Cease or cut back operation promptly if necessary. Perform priority risk mitigation to ensure that additional or enhanced preventive controls are put in place to bring down the risk index to the MODERATE or LOW range.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	MODERATE Risk	Schedule for performance of safety assessment to bring down the risk index to the LOW range if viable.
3E, 2D, 2E, 1B, 1C, 1D, 1E	LOW Risk	Acceptable as is. No further risk mitigation required.

# SOP

## **AMC1 SPO.OP.230**

### **Standard operating procedures**


#### **DEVELOPMENT OF STANDARD OPERATING PROCEDURES**

(a) SOPs should be developed to a

### **standard format**

in accordance with AMC2

SPO.OP.230 (SOP template) and  
taking into account the results of the  
risk assessment process.



(b) SOPs should be based on a systematic risk assessment to ensure that the risks associated with the task are acceptable. The risk assessment should describe the activity in detail, identify the relevant hazards, analyse the causes and consequences of accidental events and establish methods to treat the associated risk.


# **AMC2 SPO.OP.230 Standard operating procedures**

## TEMPLATE


(a) Nature and complexity of the activity:

(1) The nature of the activity and exposure. The nature of the flight and the risk exposure (e.g. low height) should be described.







(2) The complexity of the activity. Detail should be provided on how demanding the activity is with regard to the required piloting skills, the crew composition, the necessary level of experience, the ground support, safety and individual protective equipment that should be provided for persons involved.




(3) The operational environment and geographical area. The operational environment and geographical area over which the operation takes place should be described:

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- (i) congested hostile environment: aircraft performance standard, compliance with rules of the air, mitigation of third party risk;
  - (ii) mountain areas: altitude, performance, the use/non-use of oxygen with mitigating procedures;
  - (iii) sea areas: sea state and temperature, risk of ditching, availability of search and rescue, survivability, carriage of safety equipment;
  - (iv) desert areas: carriage of safety equipment, reporting procedures, search and rescue information; and
  - (v) other areas.




(4) The application of risk assessment and evaluation. The method of application of (a)(1) to (a)(3) to the particular operation so as to minimise risk should be described. The description should reference the risk assessment and the evaluation on which the procedure is based. The SOPs should:

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- (i) contain elements relevant to the operational risk management performed during flight;
  - (ii) contain limitations, where required, such as weather, altitudes, speeds, power margins, masses, landing site size; and
  - (iii) list functions required to monitor the operation. Special monitoring requirements in addition to the normal functions should be described in the SOPs.



(b) Aircraft and equipment:

(1) The aircraft. The category of aircraft to be used for the activity should be indicated (e.g. helicopter/aeroplane, single/multi-engined, other-than-complex motor-powered/complex motor-powered, classic tail rotor/Fenestron/no tail rotor (NOTAR) equipped). In particular, for helicopters, the necessary level of performance certification (Category A/B) should be specified.



(2) Equipment. All equipment required for the activity should be listed. This includes installed equipment certified in accordance with Part-21 as well as equipment approved in accordance with other officially recognised standards. A large number of activities require, in addition to the standard radio communication equipment, additional air-to-ground communication equipment. This should be listed and the operational procedure should be defined.





c) Crew members:

(1) The crew composition, including the following, should be specified:

- (i) minimum flight crew (according to the appropriate manual); and
- (ii) additional flight crew.



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- (2) In addition, for flight crew members, the following should be specified:
- (i) selection criteria (initial qualification, flight experience, experience of the activity);
  - (ii) initial training (volume and content of the training); and
  - (iii) recent experience requirement and/or recurrent training (volume and content of the training).





The criteria listed in (c)(2)(i) to (c)(2)(iii) should take into account the operational environment and the complexity of the activity and should be detailed in the training programmes.




(d) Task specialists:

(1) Whenever a task specialist is required, his/her function on board should be clearly defined. In addition, the following should be specified:

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- (i) selection criteria (initial background, experience of the activity);
  - (ii) initial training (volume and content of the training); and
  - (iii) recent experience requirement and/or recurrent training (volume and content of the training).



The criteria listed in (d)(1) should take into account the specialisation of the task specialist and should be detailed in the training programmes.



(2) There is a large number of activities for which task specialists are required. This chapter should detail the following for such personnel:

- (i) specialisation;
- (ii) previous experience; and
- (iii) training or briefing.

Briefing or specific training for task specialists referred to in (d)(2) should be detailed in the training programmes.



e) Performance:

This chapter should detail the specific performance requirements to be applied, in order to ensure an adequate power margin.



(f) Normal procedures:

(1) Operating procedures. The operating procedures to be applied by the flight crew, including the coordination with task specialists.

(2) Ground procedures. The procedures to be applied by the task specialists should be described, e.g. loading/unloading, cargo hook operation.





(g) Emergency procedures:

(1) Operating procedures. The emergency procedures to be applied by the flight crew, the coordination with the task specialist and coordination between the flight crew and task specialists should be described.

(2) Ground procedures. The emergency procedures to be applied by the task specialists (e.g. in the case of a forced landing) should be specified.



(h) Ground equipment:

This chapter should detail the nature, number and location of ground equipment required for the activity, such as:

- (1) refuelling facilities, dispenser and storage;
- (2) firefighting equipment;
- (3) size of the operating site (landing surface, loading/unloading area); and
- (4) ground markings.



(i) Records:

It should be determined which records specific to the flight(s) are to be kept, such as task details, aircraft registration, pilot-in-command, flight times, weather and any remarks, including a record of occurrences affecting flight safety or the safety of persons or property on the ground.