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## Safety at the accident site





## General

- A guidance does not replace a training, but supplement it
- The guidance must be fully customized to the concerned State
- Address national conditions
- (But do not forget that investigators may travel)



## Objectives of the guidance

- Provides for the organization at accident site to ensure safety,
- Address the hazards that may be encountered in the various situation
- Describe the equipment available for the investigators, the type of protection they give and how to use them
- Provide for the safe conduct of participants at accident site



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# CONTENT OF THE GUIDANCE ON INVESTIGATORS SAFETY AT THE ACCIDENT SITE



# Preparation

- Inoculations
- Training : initial and recurrent
- Availability of equipment
- Equipment renewal capabilities (suppliers, delays, ...)
- Investigators training
- Site safety coordinator training



# Organization :

## Site Safety coordinator

- The site safety coordinator :
  - Is a specially trained person;
  - Is formally nominated;
  - Has authority to rule investigators activities on site to ensure safety



# Site Safety coordinator responsibilities

- Assess the accident site, of existing or potential hazards
- Ensure the establishment of a safety perimeter, and the implementation of immediate safety measures before the arrival of the investigators (removal of dangerous goods or pressurized containers for example)
- Coordinate with other « Safety related » authorities/organizations acting on site
- Coordinate with investigation groups team leaders as applicable



# Site Safety coordinator responsibilities

- Brief the participants to the investigation;
- Monitor the participation of « external » participants (experts, accredited representatives, advisors, ...); in particular, check if their equipment (and their use) is appropriate)
- Ensure that investigators have proper protection equipment and use them correctly
- Monitor the activities on the site from a safety point of view
- Monitor the removal of wreckage, their transport and storing, as applicable
- At the end, debrief and derive safety lessons





# Equipment

- Address the AIA equipment :
  - reference of each equipment
  - Characteristics
  - Type of protection provided
  - How to use it (does not replace practical training)
  - Precaution for use
  - After use disposal or reconditioning (as applicable)



## Equipment

- Describe equipment you may get from “neighbouring” organizations ( army, police, ...)with whom you have agreements
- No real need to describe equipment from other foreign organizations : if they provide you with, they will explain



# Investigators Manual example 1

## Hand protection

**1** Disposable pathogen protective gloves to EN 374 / EN 388 / EN 455. These will protect against blood/fluid contact hazards and will provide a barrier against contact with dusts, fibres, and other substances in aircraft debris. These should also provide short term, protection against limited contact with the fuels and oils experienced in air accident investigation. These should also offer good dexterity to wearers.

Gloves manufactured from Nitrile materials are recommended when handling items contaminated with oils & fuels.

Thin disposable pathogen protective gloves can be used inside other work gloves.



# Investigators Manual example 2

## Gas and solvent protection classes

Protection filter codes in relation to field of application are available in [Appendix 2.7.6 – 08 Protection filter codes](#).

The following respirator filter protection classes are used: A1-A2, B1-B2, E1-E2, K1-K2.

The capacity of the filter is dependent of the amount of coal in the filter defined as 1, 2 or 3.



# Investigators Manual example 2

## Appendix 2.7 – 07 Respirator equipment

[RETURN](#)

ICM P/N 7875100

Proflow SC Power Pack



ICM P/N 7877330

Flowhood 5



ICM P/N 7140010

Profile 40 halvmaske



ICM P/N 7871000

Pro2000 P3 partikelfilter



### Åndedrætsværn generelt

#### Anvendelse

For det besluttes at anvende åndedrætsværn, skal det overvejes, om en given luftforurening af farlige stoffer kan undgås, fx ved brug af mindre farlige stoffer, eller om luftventilation kan bringe forureningsgraden til under grænseværdien. Brug af åndedrætsværn skal altid være den sidste løsning.

I koncentrationer over grænseværdien. Åndedrætsværn skal endvidere anvendes, hvis luftens indhold af ite er under 17 volumenprocent.

Brugere af åndedrætsværn skal, før arbejdet påbegyndes, have grundig teoretisk og praktisk instruktion i anvendelse og vedligeholdelse.

Åndedrætsværn skal anvendes, når indåndingsluften er forurenset eller mistænkes for at være forurenset med partikler, gasser, dampe eller røg.

#### 3 timers reglen

Anvendelse af åndedrætsværn er belastende for kroppen. Derfor er anvendelsesiden begrænset for visse typer. Filterende åndedrætsværn, altså der hvor brugeren selv skal trække vejret igennem et filter, må kun benyttes i 3 timer pr. dag. Hvis arbejdet forventes at strække sig over 3 timer, skal der allerede fra arbejdets start anvendes åndedrætsværn med turboenhed (blæser) eller luftforsyning åndedrætsværn.

#### Beskyttelsesfaktor

Beskyttelsesfaktoren angiver, hvor mange gange åndedrætsværnet kan nedsette koncentrationen af sundhedsskadelige stoffer inden i masken i forhold til koncentrationen i omgivelserne. Hvis der fx i omgivelserne er en forurening på 400 mg/m<sup>3</sup>, og åndedrætsværnets beskyttelsesfaktor er 200, vil den i indåndingsluften være en forurening på 2 mg/m<sup>3</sup>. Beskyttelsesfaktoren er altså under ideelle forhold ved laboratorietest og kaldes den nominelle beskyttelsesfaktor. Den reelle beskyttelsesfaktor vil over tid være betydeligt lavere pga. slitage, mangelfuld tilpasning, osv. Det er derfor vigtigt, at der ved valg af åndedrætsværn tages højde for dette!

ophold uden brug af åndedrætsværnet vil i betydelig grad nedsette den forventede beskyttelse.

For hver godkendelsesklasse af åndedrætsværn er opgivet en forventet beskyttelsesfaktor ved 100% brugstid. Beskyttelsesfaktoren angiver, hvor mange gange renere luften er inde i masken. Hvis den reelle brugstid af åndedrætsværnet falder, så vil den reelle beskyttelsesfaktor falde dramatisk! Se skemaet nedenfor. Ved en brugstid på 80% er det stort set underordnet, hvilken type åndedrætsværn man benytter. Beskyttelsesfaktoren vil næsten være ens!

Åndedrætsværnet skal bruges fra arbejdets start og i hele den periode, hvor man opholder sig i det forurenede område. Selv et kortvarigt

Åndedrætsværn

Procent af arbejdstiden i forurenset miljø, hvor åndedrætsværn benyttes. 100% betyder at åndedrætsværnet benyttes hele tiden	100%	95%	90%	80%	Eksempel på åndedrætsværn
Effektive beskyttelsesfaktorer	25	11,40	7,40	4,30	
	50	14,50	8,50	4,60	Halvmaske
	100	16,80	9,20	4,80	
	1000	19,60	9,90	4,98	Luftforsyning sandblæsningshjelm
	10000	19,9	9,99	4,99	SCBA

5% = 3 min.

Hvis åndedrætsværnet IKKE benyttes i blot 3 min., betyder det en forringelse af den forventede beskyttelsesfaktor fra fx 100 til 16,8!





## Internal rules

- Duty time limitations (specially with biohazard suits)
- Conditions requiring the use of protective equipment
- Functions and duties of the safety coordinator
- etc.,.



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## Post investigation aspects

- Medical follow up
- Psychological follow up







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Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montreal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Office  
Bangkok

Thank You

A world map is shown in a light blue color. Eight dots are placed on the map, each connected by a thin line to a text label describing an ICAO office. The labels are: North American Central American and Caribbean (NACC) Office Mexico City; South American (SAM) Office Lima; ICAO Headquarters Montreal; Western and Central African (WACAF) Office Dakar; European and North Atlantic (EUR/NAT) Office Paris; Middle East (MID) Office Cairo; Eastern and Southern African (ESAF) Office Nairobi; and Asia and Pacific (APAC) Office Bangkok. The Montreal dot is highlighted in orange, while the others are blue.