

## Standard medical procedure after fume events

This standard investigation procedure was drawn up in coordination with the German Aviation Association (BDL) with the involvement of the Medical Services and Occupational Health Services of the airlines, flight operations, BG Verkehr, representatives of flight doctors, crews and the airlines, as well as from the academic world. It was updated at the beginning of 2017 in coordination with the BDL. From a specialist point of view, the BG Verkehr procedure is recommended for use as the basis for a medical diagnosis immediately following a “fume event”.

### Procedure after Landing

- The captain determines that a fume event has occurred and informs flight operations.
- Within the context of the gathering of facts, the entire cockpit and cabin crew of the affected flight are to provide statements, including those crew members who are not experiencing any health issues.
- Crew members who are suffering health issues are to seek out a doctor immediately. The company medical service of the airline should for this purpose provide information to crews on appropriate medical drop-in centres close to the airport where the personnel can, at a minimum, carry out the recommended examination and have the right training and information to deal with crews who have experienced a fume event.
- In the case of incapacity to work which extends further than the day of the incident, and in the case of treatment being required for more than 7 days, the affected persons must present themselves to an accident insurance consultant.
- BG Verkehr will be sent the accident notification from their member company and the medical report from the accident insurance consultant (D-Arzt).

### Content of a Medical Examination after a Fume Event

#### Precise details of the case

- Type of aircraft and registration number
- Flight number and route, phase of flight
- What is known about the cause and about its elimination?
- What symptoms occurred and when? How long did they persist?
- Did any of the passengers display symptoms?
- Has the affected person taken any medication?
- Is the affected person a smoker?
- Are there any underlying medical conditions?

#### Targeted physical examination

*Even in the case that there are no specific symptoms, at a minimum:*

- Blood pressure at rest
- Pulse at rest
- Pulse oxymetry
- Initial physical examination, e.g. for exclusion of hypersalivation
- Initial neurological examination
- incl. bulbomotoricity and pupillomotoricity
- Examination of at least BSR, TSR, PSR and ASR
- Examination of peripheral motor function and sensitivity
- Romberg and Unterberger

- In the case of relevant symptoms which need to be clarified or treated, further (practising) specialist doctors may be called upon, e.g. for a supplementary neurological examination by a specialist neurologist (as soon as possible if there is any suspicion of a neurological disorder) or the involvement of a pulmonary specialist, etc.
- On account of their particular knowledge of the workplace in question, it is also advisable to arrange a subsequent consultation with the company doctor.

The causes of fume events on board the aircraft are manifold and their impact on the individual's health remain unclear. It must therefore be assumed that there is a wide spectrum of possible causes (lubricant on the engine bearings or their thermally changed fission products or auxiliary products, de-icing fluid, smells resulting from technical damage to electrical components, or overheated substances from the galley, etc.). Further diagnoses should be made on the basis of the main symptoms in any given case and the facts of the risk assessment in relation to the particular technical features of the aircraft in question.

#### Optional examinations

- further physical examinations
- additional technical investigations

#### Lab results

Mandatory	Optional
standard blood count	ALAT, ASAT (GPT, GOT)
methaemoglobin	Serum Acetylcholinesterase
carboxyhaemoglobin	CK
y-GT	
creatinine	
blood sugar	
semi-qualitative urine analysis (urine dipstick analysis)	

#### Airlines:

Please record all technical flight and aircraft data pertinent to the accident report including technical fault findings and possible medical aspects. These data will be requested by the labour inspector of BG Verkehr in case of need.

Specialist questions can be answered by the Prevention Division of the Occupational Health Department of BG Verkehr:

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Questions on the accident report in the case of fume events can be answered by the employees in the Accident Department of the Hamburg Regional Administration Offices of BG Verkehr:

E-Mail: hamburg@bg-verkehr.de  
Tel.: +49 40 325220-0