

Plane crash exercise Kuusamo

Reporter

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Role in incident: Treatment officer

Co-authors

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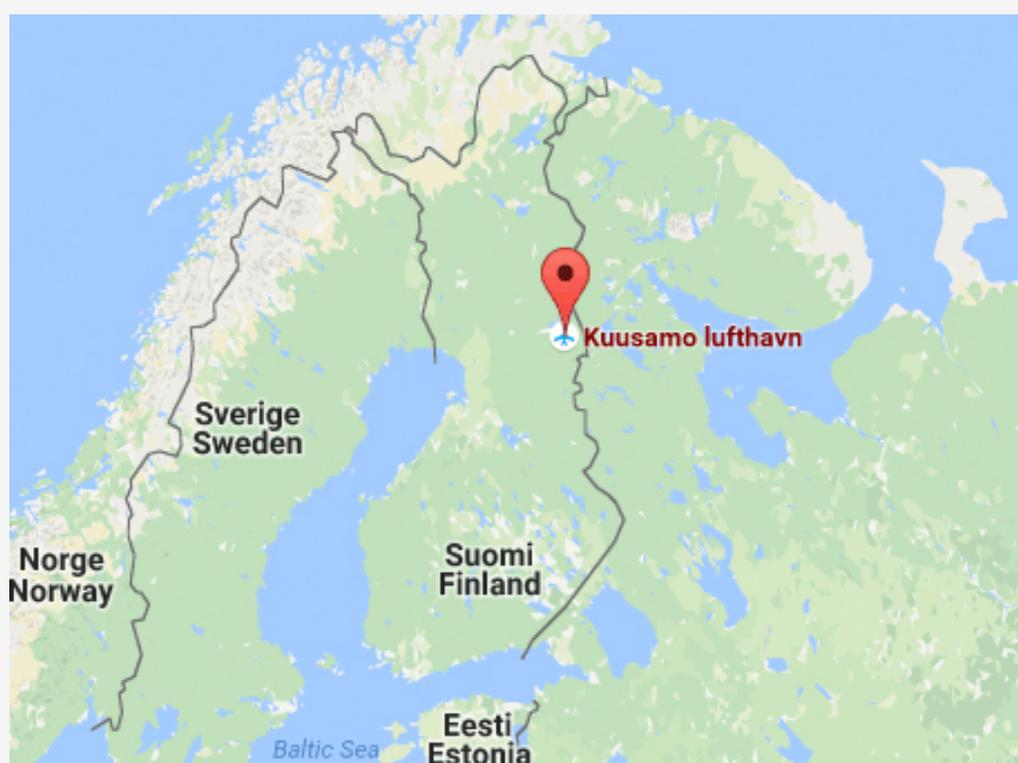
Role in incident: Observer, Field supervisor

Pasi Lehto

Role in incident: Observer, pre-hospital anaesthesiologist



Incident location



Summary

The incident took place in Finland at Kuusamo Airport. A passenger aircraft with 20 passengers and four crew members had a tough landing after light contact with another aircraft in the air. In the secondary triage: 3 red, 7 yellow, 12 green and 2 black patients.

The success factors in this major incident exercise were very fast initiation of major incident protocol, the use of local emergency medical response team and good communication. Another success factor was that EMS units also from other hospital districts were dispatched and they communicated and worked effectively during the exercise. In a very rural area, with limited number of EMS units, co-operation with other hospital districts is of great importance. The mandatory major incident communication simulation trainings have probably improved the communication during full scale exercises. The EMS communication plan is similar in all hospital districts in Northern Finland. HEMS unit was not able to fly to the scene due to weather restrictions. However, HEMS doctor (DOC) and HEMS crew member (HCM) responded using a rapid response unit.

Area

Kuusamo Airport, northern Finland. N 65 50'25 E 029 12'55. Population density in Kuusamo is 3,13 inhabitants per km² (2016) and population 15,555.

There is a health care centre in Kuusamo with 24/7 GP on call. The nearest hospitals are in Oulu (university hospital) and in Rovaniemi (central hospital). Transport time to hospitals is 2,5-3 hours by car.

The population outside the airport is sparse. In 2014 73,432 passengers used the Kuusamo airport.

Special circumstances

Northern Finland, "rural area". Kuusamo is a township. Nearest university hospital (level-1 trauma centre) 215km.

Incident characteristics

1.1. Date of incident *	2016-10-18
1.1.2. Time (HH:MM) of incident	10.05
1.2. What was the mechanism/external factor that caused the incident? Please tick for all options that apply. *	Transport and industrial incident
1.4. Is this incident coupled to another incident? *	No
1.5. What was the location of the incident scene? Please tick for all options that apply. *	Rural/countryside area
2.1. What was the EMS' mode of access to treat patients at incident scene? Please tick for all options that apply. *	Wheeled vehicles
3.1. What was the EMS' mode of evacuating patients from the incident scene? Please tick for all options that apply. *	Wheeled vehicles
4.1. Was there damage to infrastructure that affected EMS response? Please tick for all options that apply. *	No damage
4.3. How many sites required separate EMS infrastructure (such as on-scene leadership and casualty clearing stations) in the response phase? *	3
5.1. Which hazards existed for rescuers on	No hazards existed

scene? Please tick for all options that apply. *

6.1. Which hazards existed for patients on scene? Please tick for all options that apply. *

Climate

EMS response data

7.1. Which (if any) of the following actions were implemented by the medical response? *

- Assume the role of on-scene medical commander
- Begin to make an assessment of scene safety
- Communicate a situation report to EMS coordinating centre
- Initiate any safety related actions
- Delegate responsibility for other tasks on scene

7.1.1. Were these actions implemented by the first medical responder to arrive on scene? *

No

7.1.2. Who implemented them and why?

All were ordered by Field Supervisor, who had dedicated role as medical incident commander.

7.1.3. Do you have a dedicated on-scene medical commander in your EMS system? *

Yes

7.1.4. What kind of personnel assumed the role of on-scene medical commander in this incident?

Field Supervisor on call in Oulu University hospital

7.2. Give details of which safety actions were initiated (eg. High visibility vests or personal protective equipment for responders)

Helmet use by EMS providers. High-visible vests. Area was secured by Fire Brigade.

7.3. Give details of which tasks were delegated (eg. Ambulance parking officer, Primary triage officer)

HEMS physician got a position as treatment officer. An EMS unit got a role as triage officer and an EMS unit as transport officer. On duty field supervisor was the medical commander.

8.1. By whom were additional medical staff who responded to the major incident summoned? *

- On-scene medical commander
- EMS coordinating centre

9.1. Were medical pre-hospital resources used in the major incident response coordinated by: *

On-scene medical commander?

Medical command structure

10.1. Was there a pre-hospital major incident response plan in place? *

Yes

10.1.2. How did your actual response differ to the plan and what was the consequence of that?

Unfortunately, the response plan is only in Finnish. We consider that detailed response plan should not be uploaded here.

Response did not differ from the response plan. Medical supervisor took the position as medical incident commander and HEMS physician was ordered to take position as the treatment officer, as described in response plan.

Medical communication

11.1. Was satisfactory communication achieved between those who needed to communicate during the incident? *

Yes

11.2. Who managed communication at the incident? *

On-scene medical commander

11.4. When available, please provide a timeline for central communication issues

After the roles were ordered, all sub-leaders (treatment, triage and transport officer) were communicating in the same talk group and could communicate downwards in the own sector talk groups. Medical Incident Commander used the talk group with sub-leaders and one talk group for dispatch centre and one talk group to communicate with police, fire and frontier guard.

Mode of communications

12.1. Which mode/s of communication were used during the major incident response? Please tick for all options that apply. *

Radio, tetra

13.1. Which of the communication systems are in use on a daily basis? *

- Tetra radio
 - Mobile phone
-

EMS response data

14.1. Please state number of lay persons with no field care education present at the incident scene *	0
14.2. Please state number of non-EMS personnel with basic life support (BLS) competency present at the incident scene *	6
14.3. Please state number of EMS professionals who were not physicians, but with BLS competency present at the incident scene *	20
14.4. Please state number of EMS professionals who were not physicians, but with Advanced Life Support (ALS) competency present at the incident scene *	7
14.5. Please state number of on-scene physicians with ALS competency present at the incident scene *	3
14.6. Please state number of other type of personnel/persons present at the incident scene *	4
14.6.1. Please specify other type of personnel/persons *	Airport authority

Transport

15.1.1. Number of EMS vehicles available at the incident scene *	8
15.1.2. Number of EMS helicopters available at the incident scene *	0
15.1.3. Number of EMS boats available at the incident scene *	0
15.1.4. Number of other type of EMS units available at the incident scene *	3
15.1.4.1. Please specify other type of EMS units *	HEMS vehicle - HEMS physician (DOC) and hems crew member with advanced level paramedic competence (HCM)

Bordercontrol officers, helicopter
Medical on call field officers vehicle

15.2.1. Number of civilian vehicles available at the incident scene *

1

15.2.2. Number of civilian helicopters available at the incident scene *

0

15.2.3. Number of civilian boats available at the incident scene *

0

15.2.4. Number of other type of civilian units available at the incident scene *

1

15.2.4.1. Please specify other type of civilian units *

Bus

15.3.1. Number of other emergency services vehicles available at the incident scene *

3

15.3.2. Number of other emergency services helicopters available at the incident scene *

1

15.3.3. Number of other emergency services boats available at the incident scene *

0

15.3.4. Number of other units available at incident scene *

0

Equipment

16.1. What kind of equipment was available on-scene enabling EMS to do their job? Please tick for all options that apply *

- Equipment to provide care for patients exposed to hazardous materials
- Support vehicles
- Other type of equipment

Patient surge data

17.1. Number of receiving hospitals *

2

17.1.1. Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers *

201-300

17.1.2. Type of hospital I *	Major hospital with trauma specialty
17.1.3. Date of first patient transported to hospital *	2016-10-18
17.1.4. Time (HH:MM) of first patient transported to hospital	11.30
17.1.5. Date of last patient transported to hospital *	2016-10-18
17.1.6. Time (HH:MM) of last patient transported to hospital	12.25
17.2.1. Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers *	51-100
17.2.2. Type of hospital *	Local hospital without trauma specialty
17.2.3. Date of first patient transported to hospital *	2016-10-18
17.2.4. Time (HH:MM) of first patient transported to hospital	1200
17.2.5. Date of last patient transported to hospital *	2016-10-18
17.2.6. Time (HH:MM) of last patient transported to hospital	1230
18.1. Number of patients with minor injuries *	12
18.2. Please provide the data source from which these numbers originate	12 green patient out of total 24 patient
18.3. What was the total number of patients seeking care at a hospital *	22

Patient characteristics

19.1. What was the estimated number of people at risk from the major incident? (e.g. number of passengers on a train / ship) *	50
19.2. Please explain how the above number of population at risk was reached *	primary triage + secondary triage. also the population near the airport that could have been injured
20.1. Number of males injured *	12

20.2. Number of females injured *	12
20.3. Number of neonates injured *	0
20.4. Number of infants (1 month - 2 years) injured *	0
20.5. Number of young children (2-6 years) injured *	0
20.6. Number of children (6-12 years) injured *	0
20.7. Number of adolescent (12-18 years) injured *	0
20.8. Number of unidentified/missing victims *	0
21.1. What was the number of dead on-scene/dead before any medical care was provided? *	Unknown
21.2. What was the number of dead before arrival at hospital? *	Unknown
21.3. What was the number of deaths of those admitted to the hospital within 30 days of the event? *	Unknown
21.4. Is data collection of thirty day mortality of those admitted to hospital considered complete? *	Unknown
21.5. Was a pre-hospital triage system used? *	Yes
21.5.1. Who performed the pre-hospital on-scene triage? *	<ul style="list-style-type: none"> ● Physician ● EMS personnel
21.5.2. Which triage system was used? *	Major incident (red, yellow, green, black)

Triage

22.1. Number of patients in triage category red = immediate upon first assessment on scene *	Unknown
22.2. Number of patients in triage category	

yellow = urgent upon first assessment on scene *	Unknown
22.3. Number of patients in triage green = minor/delayed upon first assessment on scene *	15
22.4. Number of patients in triage category black = deceased upon first assessment on scene *	Unknown
22.5. Number of patients who were triaged in another category than the previous upon first assesment on scene *	Unknown
22.5.1. Please describe the other triage categories *	While this is an excercise also the number less than six can be reported. two black, two red and five yellow patients in primary triage.
22.6. Was there any over- or undertriage? *	Yes
22.6.1. If possible please depict the % of over and under triage and how the calculations were undertaken	primary triage-->secondary triage 2 black-->2 black 2 red-->3 red 5 yellow-->7 yellow 15 green-->12 green

Types of injury

23.1. Number of patients with blunt trauma *	22
23.2. Number of patients with penetrating trauma *	0
23.3. Number of patients with burns *	0
23.4. Number of patients drowned *	0
23.5. Number of patients with asphyxiation *	0
23.6. Number of patients with hypothermia *	0
23.7. Number of patients with intoxication/poisoning *	0
23.8. Number of patients with infectious disease *	0
23.9. Number of patients with acute psychiatric symptoms requiring medical	0

attention *

23.10. Number of patients with nuclear or radiological injury *

0

23.11. Number of patients with biological injury *

0

23.12. Number of patients with chemical injury *

0

23.13. Number of patients by other type of injury *

0

23.13.1. Please specify other types of injury sustained *

-

23.14. Number of patients admitted to critical care area *

Unknown

Key lessons

24.1. During the pre-hospital emergency medical response to this major incident, were there any particular problems that may be improved in future major incidents? *

Yes

24.2. In what area/s did the problem/s occur? *

Other

24.8. Please specify other problems that were encountered and may be improved in future major incidents *

One problem is that the fire and police did have a little knowledge to the leadership structure in EMS. Medical incident commander took about two hours to get to the scene and was not available "face to face" on scene. However, medical incident commander communicated all the time by TETRA between fire department and the sub-leaders in EMS. The field supervisor unit was staffed with two persons, which made it possible for the field supervisor to concentrate and function as the medical incident commander.

25.1. During the pre-hospital emergency medical response to this major incident, were there any particular successes that may enhance the response to future major incidents? *

Yes

25.2. In what area/s did the success/es occur? *

- Issues related to pre-incident situation in the country/region

25.3.1. What element of the response went particularly well? *

- The EMS response

The major incident communication training has been mandatory.

25.3.2. What recommendations would you make for the response to future major incident responses? *

The mandatory training in major incident communication has to be continued.

25.6.1. What element of the response went particularly well? *

- 1) Involvement of local emergency medical team from health care centre.
- 2) The use of resources from other hospital districts.

25.6.2. What recommendations would make for the response to future major incidents? *

- 1) In very remote areas, with limited ambulance resources, local medical team is necessary.
- 2) Training with the units from other areas/hospital districts is of importance.

EMS background

26.1. Was an EMS coordinating centre (the centre responsible for dispatching and coordinating EMS units to the scene) available in the affected country/ies at the time of the incident? *

Yes

26.2. Is there one common dialling number for all Emergency Services (fire, police, EMS) *

Yes

26.3. Can a major incident be declared directly by the person receiving an alert at the EMS coordinating centre? *

No

26.5. What is the background of staff in the every-day/normal staffing of EMS services? Please tick for all options that apply. *

- Basic Life Support by non-EMS professional
- Basic Life Support by EMS professionals, non-physician
- Advanced Life Support by EMS professional, non-physician
- Advanced Life Support On-scene by Physician

26.6. What other resources are routinely available to assist the EMS service in a normal setting? Please tick for all options that apply. *

- Fire brigade
- Police
- Coast guard
- Other / Unknown

26.6.2. Please specify other resources that are

border control (helicopter + coast guard)

routinely available or leave blank if unknown.

26.7. What other resources can be mobilized in a major incident? Please tick for all options that apply. *

- Fire brigade
- Police
- Other resources / Unknown

26.7.2. Please specify other resources that can be mobilized or leave blank if unknown

border control

27.1. Does the country where the major incident took place have a trauma network? *

Yes

27.2. Are there any regional hospital/s with trauma specialty that exists within the EMS catchment system that was affected by the major incident? *

Yes

27.2.1. Please state the number of regional hospital/s with trauma specialty within the EMS catchment system that was affected by the major incident *

1

27.3. Are there any regional hospital/s without trauma specialty that exists within the EMS catchment system that was affected by the major incident? *

No

27.4. Are there any local hospital/s without trauma specialty that exists within the EMS catchment system that was affected by the major incident? *

Yes

27.4.1. Please state the number of local hospitals without trauma specialty within the EMS catchment system that was affected by the major incident *

1

27.5. Are there any other type of hospital/s that exists within the EMS catchment system that was affected by the major incident? *

No

27.6. Is there a pre-hospital triage system in use on a daily basis on a national level? *

Yes

27.6.1. Please specify which pre-hospital on-scene triage system/s are in use on a daily basis *

-

27.7. Is a pre-hospital triage system in use on a daily basis on regional levels? *

Yes

27.7.1. Please specify which pre-hospital on-

scene triage system/s are in use daily on regional levels *

-

27.8. Is a pre-hospital triage system in use for major incidents on a national level? *

Yes

27.8.1. Please specify which pre-hospital triage systems are in use for major incidents *

-

27.9. Is a pre-hospital triage system in use for major incidents on regional levels? *

Yes

27.9.1. Please specify which pre-hospital on-scene triage system/s for major incidents are in use on regional levels: *

-

27.10. Does the pre-hospital on-scene triage system for major incidents include direct tagging/labelling of patients? *

Yes

27.10.1. If possible, please describe type of tagging

wristband and/or tags

27.11. For those employees within the pre-hospital EMS system who are intended to work on-scene: is major incident training mandatory? *

Yes

27.11.1. If possible, please describe type and frequency of training

1/year

27.12. Does the region have a major incident plan? *

Yes

27.12.1. How often is the major incident plan tested? *

1-3/year

27.13. Is there an in-hospital major incident response plan for each hospital receiving patients? *

Yes

27.14. Is there a regional major incident response plan incorporating all emergency services within the area that the the major incident occurred? *

Yes

Additional files upload

28.1. Upload time of events document

[Timeline-of-events-FINAL.docx \(23k\)](#)

