Radiation, Dangerous Goods, All Hazards...
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Plan

- International Reaction to Fukushima
  - From ICAO viewpoint
- Plans in place at time of accident
- ICAO’s action during crisis
- Formal proposals by ICAO resulting from accident
- Lessons learned
- Dangerous Goods Transport
- UN All Hazards Approach
What if:
• An aircraft flies through the plume?
• An aircraft is parked overnight downwind?
• An exposed individual wants to fly for treatment?
• Should Japan be screening departures?
  Cargo?
  People?
• Should other countries be screening for arrivals?
  Cargo?
  People?
• What levels are acceptable?
• What equipment/training/PPE is needed?
• Etc....
Nuclear Power Plants – where are they?
Reaction to accident - Haphazard

- Information difficult to obtain
  - IAEA and other UN agencies need invitation to intervene
- Some border controls used security scanner results (very sensitive).
  - Levels used variable and of uncertain validity
- Some States screened containers
- Throughout, IAEA did not recommend screening
- Note similarity to response to H1N1
  - WHO did not recommend screening – over 50% of countries instigated screening
Predicted atmospheric spread

Is it safe to fly through the plume? What are the deciding factors?
Concern by crew about levels in food and water

Is it safe to upload food and water from Japan?  
At all airports in Japan?  
Where do airlines obtain information?
Are crew members safe? Any precautions?
Do aircraft need to be decontaminated? How?

Measurement of Radiation Dose around the Metropolitan Airports

<table>
<thead>
<tr>
<th>Measurement points</th>
<th>Apr.19 PM</th>
<th>Apr.20 AM</th>
<th>Apr.20 PM</th>
<th>Annual exposure calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narita Airport</td>
<td>0.120 μGy/h 19:00</td>
<td>0.110 μGy/h 10:00</td>
<td>0.107 μGy/h 19:00</td>
<td>≈0.000107mSv/h, 0.94mSv</td>
</tr>
<tr>
<td>Haneda Airport (Ukimachi, Kawasaki City)</td>
<td>0.081 μGy/h 19:00</td>
<td>0.079 μGy/h 10:00</td>
<td>0.080 μGy/h 19:00</td>
<td>≈0.000080mSv/h, 0.70mSv</td>
</tr>
</tbody>
</table>

1) According to the website of Tokyo Electric Power Company, the unit is converted as follows; 1 micro-Gray/hour (μGy/hr) ≡ 1 micro-Sievert/hour (μSv/hr).

2) “Annual exposure calculation” is the estimation under the condition that the hourly radiation dose measurement at the measurement point is accumulated for 24 hours throughout the year.

3) 1 mili-Sievert (mSv) = 1000 micro-Sievert (μSv)

According to the Ministry of Education, Culture, Sports, Science and Technology, examples of exposure level of radiation in daily life are as below.
- Chest X-ray (once): 0.05 mSv
- 1 roundtrip between Tokyo and New York by air: 0.2 mSv
- Stomach X-ray (once): 0.6 mSv

According to the WHO, a person is exposed to approximately 3.6 mSv/year on average.

References:

○ NARITA INTERNATIONAL AIRPORT CORPORATION Website

★ Kanagawa Environmental-radiation Monitoring-system Website (Japanese only)
  http://www.atom.pref.kanagawa.jp/cgi-bin2/telemeter_dat.cgi?Area=1&Type=W
Association of European Airlines

Radioactive Contamination of Aircraft and Engines

3rd edition
June 2002

Alert Levels

- Below Level I (< 4 Bq/cm²)  
  *No action*
- Level I (4 to 9 Bq/cm²)  
  *Airline expert called*
- Level II (10-39 Bq/cm²)  
  *AEA communication system started*
- Level III (>40 Bq/cm²)  
  *Protection for workers must be provided*
Plans already in place

- International Atomic Energy Agency *Joint Radiation Emergency Management Plan*
  - World Meteorological Organization provides information on spread of plume
  - ICAO provides air traffic routings
- Did not address the questions mentioned
- CAPSCA – Cooperative Arrangement for the Prevention of Spread of Communicable disease through Air Travel
  - Experience proved very useful
Interlinking guidelines developed through CAPSCA

- **WHO global Preparedness**
- **ICAO SARPs & Guidelines**
- **Airports Council International airport guidelines**
- **International Air Transport Association airline guidelines**

- Guide to Hygiene and Sanitation in Aviation
- Case management of Influenza A(H1N1) in air transport
- IHR 2005

**Electricity, ground transport, IT support, food, water, security, etc**

*CAPSCA-Ulaanbaatar April 2012*
WHO involvement

Public health emergency of international concern
– an extraordinary event that is:

• International

• Require a coordinated international response

[WHO did not declare the Japanese situation a PHEIC]

IHR does not address all aspects related to travel e.g. advice for workers or risk to aircraft
ICAO Transport Task Force

Weekly teleconference call
ICAO
IAEA
WHO
IMO
WMO
UNWTO
ILO
IATA
ACI

Output - Three press releases during the initial weeks
Proposal to IAEA ministerial conference

- Amendment of the Joint Radiation Emergency Management Plan
  - Strengthen involvement of the international transport modal authorities e.g. International Maritime Organization and ICAO
- Creation of Inter-agency Transport Committee.
- Participate in “Logistics Cluster”
Lessons learned

• Communication, communication, collaboration, collaboration...
• Between agencies/organizations
  – Agencies to public
• Management of fear: actual risks are small
  – For passengers in H1N1: Increased anxiety = increased information needs
  – No relation between anxiety and actual risk of illness
  – Lack of information = increased anxiety (regardless of actual risk)
  – Staff require special attention
  – Public health/medical staff – authentic source of information

Dickmann et al. (2011) New influenza A/H1N1 (“Swine Flu”): information needs of airport passengers and staff. Influenza and Other Respiratory Viruses 5(1), 39-46
Lessons learned

• Planning is crucial
  – Took a week to establish Transport Task Force after Fukushima accident
  – Pre-established networks are required

• Don’t rush to monitoring – cleaning is first protection
  – Hand washing analogy
Lessons learned

• Crisis management is generic (all hazards approach)
  – Networks established for CAPSCA (www.capsca.org) were useful
• Crisis management is usually multi-sectoral
  – Public and private e.g. IATA and ACI
Lessons learned

- Crisis management requires changes in work practices (at least for ICAO)
  - Crisis management room
  - Changes in work practices (24/7 availability during crisis)
  - Resources
    - Increased (but also more available)
Lessons learned

• Improved management of politicians
  (Who want to do something and be seen to be doing something)
  – Buy-in for preparedness planning at high level required: all levels - UN, governmental, industry
  – ICAO needs increased visibility in UN crisis management (MOU with WFP)
Do limits for cargo apply to contaminated individuals?
Do limits for post treatment individuals apply to those seeking treatment?
Multimodal harmonization

Road

Air

Rail

Sea

IAEA Safety Standards
for protecting people and the environment

Regulations for the
Safe Transport of
Radioactive Material
2009 Edition

Technical Instructions
for the Safe Transport of
Dangerous Goods by Air
Classification

- Class 1: Explosives
- Class 2: Gases
  - Division 2.1: Flammable gas
  - Division 2.2: Non-flammable, non-toxic gas
  - Division 2.3: Toxic gas
- Class 3: Flammable liquids
- Class 4
  - Division 4.1: Flammable solids
  - Division 4.2: Substances liable to spontaneous combustion
  - Division 4.3: Substances, which on contact with water, emit flammable gases
- Class 5
  - Division 5.1: Oxidizer
  - Division 5.2: Organic Peroxides
- Class 6
  - Division 6.1: Toxic substances
  - **Division 6.2: Infectious substances**
- Class 7: Radioactive material
- Class 8: Corrosives
- Class 9: Miscellaneous dangerous goods
Specific packaging requirements
Global Cluster Overview

Humanitarian reform seeks to improve the effectiveness of humanitarian response by ensuring greater predictability, accountability and partnership. It is an ambitious effort by the international humanitarian community to reach more beneficiaries, with more comprehensive needs-based relief and protection, in a more effective and timely manner.

The Inter-Agency Standing Committee (IASC) has designated global sector leads in eleven areas of humanitarian activity.

What's New
- OCHA-HCSS Pakistan Mission Report
- Humanitarian Coordination Pool
- Cluster Roll-Out
- Country Level Implementation
- Global Capacity Building
- Global Capacity Building Information
- Information Management
- Inter-Agency Information Management

Latest Documents
- ETC plenary meeting October 2009 - Agenda
- Agenda ETC 10 June 2010 meeting.pdf
- ETC 8 Oct 2010 plenary meeting - Agenda
- IASC Annual Mtg 20-21 Oct 09 Agenda
- IASC Annual Mtg 2010 Agenda Final
- Agenda Education Cluster Coordination Workshop September 2008
- Agenda Education Cluster Working Group Meeting September 2008
- Agreement (MOU)
- Education Cluster Memorandum of Understanding
- Education Cluster Working Group Terms of Reference
UN ‘All Hazards’ Humanitarian Response to crises

• The Cluster System
  – Camp Coordination
  – Early Recovery
  – Education
  – Emergency Telecommunications
  – Food Security
  – Health
  – **Logistics – transport cell proposed**
  – Nutrition
  – Protection
  – Water and Sanitation
Summary

• Reviewed issues raised during the accident and its aftermath
• Considered plans in place at time of accident
• ICAO’s action during crisis
• Formal proposals by ICAO resulting from accident
• Lessons learned – Communication......
• Dangerous Goods Transport
• All Hazards Approach
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