



YVR Aircraft Crash Exercise

April 29, 2015

YVR



- Canada's second busiest airport
- 20 million passengers in 2015
- 54 airlines and 111 non-stop destinations
- Up to 1000 aircraft movements per day

Outline

- Goals and Objectives
 - Plan – Train - Exercise
 - Unified Command
 - Outcomes
-

Canadian Aviation Regulations

CARs 302.208 Testing of the Emergency Plan

(2) The operator of an airport shall test the emergency plan by conducting a full-scale exercise...at intervals not exceeding two years;

(3) The operator of an airport shall conduct full-scale exercises based on scenarios that relate to a major aircraft accident and, at a minimum, the exercises shall include the assembly and deployment of fire-fighting, policing and medical services organizations.

Goals & Objectives – Enterprise Risk Management

Evaluate interagency communication and coordination of public messaging

- Everyone is a journalist
- Hartley PR acting as Exercise Controllers
- Artificial tweets, FB posts, mock press conference



YVR Communications Dept set up their own training, within the major event.
Hired an external agency to conduct interviews, send injects, audit performance.
Media drives events, exerting significant pressure on the EOC; this forces the need for good information from the scene.

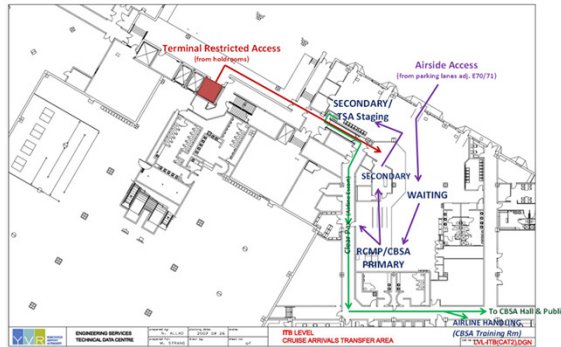
Goals & Objectives – Business Resumption



Practiced investigations

- Accident scene and evidence preservation
- Survivor, crew, and first-responders interviewed
- Thesis – studying YVR's performance in handling survivors
- Runway and taxiway assessments / alternative routings
- Medevacs, south side operations, terminal impacts

Goals & Objectives – Passenger Reception Center



- Drilled the Passenger Reception Ctr with agencies prior to exercise.

Goals & Objectives – EOC



Practiced YVR's revised Incident Command System

- YVR-specific ICS and EOC positions
- Terminal Operations (Terminal Command) Plan
- Communications Operations Centre
- Universal Access Coordinator
- Aircraft Recovery Coordinator



YVR has a large team that is organized during major irregular operational events, and this program has been renamed the Terminal Operations Plan to reduce confusion with the already established ICS terms of Incident Command.

The Terminal Operations team is represented in the EOC, and this rep relays info to/from a large team located in breakout rooms and in the Terminal.

YVR has airport-specific roles in the EOC, including Aircraft Recovery Coordinator, Airside Operations Coordinator, and a Universal Access Coordinator.

Goals & Objectives – Scene



Tested YVR's response to an on-airport aircraft crash scenario

- Unified Command
- Coaching Unified Command in Mobile Command Post
- Exercise methodology: operational phases



Exercise Gemini



- Less systems tested - set the stage for success
- Unified Command often doesn't get a fair chance during an exercise.

Typically a test, but this time more staged and more directed at learning, but still many aspects were tested.

Important that there are successes, to build upon, rather than a huge list of 'challenges' that need correcting.

For example, we don't need to test how long it takes to deploy the MCP, or how long it takes to fully staff-up the EOC.

Wanted to focus on Unified Command and interagency communications.

Exercise Planning - participating agencies



- BC Ambulance Services
- BC Coroner Service
- BC Institute of Technology
- Canada Border Services Agency
- Canadian Forces
 - JTF
 - JRCC
- CATSA
- City of Richmond
- EComm
- Fairmont Hotel
- Hospitals
 - Richmond
 - Vancouver
 - Children's & Women's
- London Air Services
- NavCanada
- RCMP
- Richmond Fire Rescue
- Salvation Army
- Securiguard
- Transportation Safety Board
- Transport Canada
- US Customs & Border Protection
- WestJet
- YVR Chaplaincy

Make our exercises BIG to ensure many agencies can participate (e.g. VIP RCMP response)

Methodology: Operational Phases



Phase I 90mins	Unified Command	Fire suppression + rescue	Staging	Triage + transport
Hot wash debrief				
Phase II 90mins	Evidence preservation	Investigation	Interviews	Business resumption

Operational Phases:

Phase I apx. 90mins – fire suppression, rescue, equipment + resource staging, victim triaging, transporting injured and non-injured, strong emphasis on Unified Command.

Phase II apx 60mins – emphasis on investigation, evidence preservation, crew interviews, business recovery. For every 1hr of incident, plan on 1day of recovery.

Mobile Aircraft Firefighting Trainer (MAFT) allows for responders to practice approaches and flame knockdowns.

The ICS coach was brought in to hover and coach where needed. At times he had to lead/demonstrate, and other times he was able to stand back and observe/advise.

Pre-exercise training: YVR-applied ICS



- Incident Command System / Unified Command theory
- EOC Director and Incident Commander on same page
- Initial size-up critical

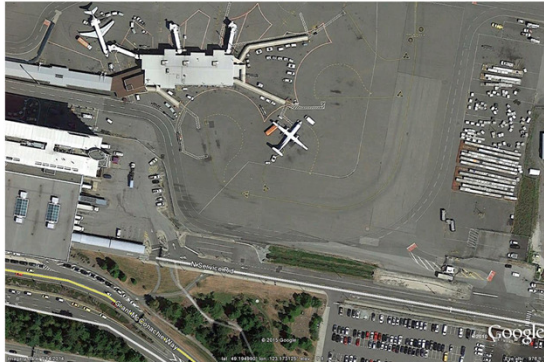
ICS for responders participating in the exercise, two day session with the ICS coach prior to April 29.

Implemented new dispatching protocol and unified command radio protocol, then tested these at the exercise.

Needed our fire responders to understand that an aircraft fire is much bigger than just a fire.

What do you own? What do you need? Who will help you?

More than just a fire...



- Command of the scene vs. Command of the entire airport
- What do you own? What do you need? Who can help you?

Set a theoretical scenario that forced responders to realize they could not handle all of the impacts related to the incident.

Exercise Gemini - scenario

ABC Airlines B737 crashes near runway 26L. The crash site is south of 26L at the southernmost end of taxiway Charlie, near Apron 3. Smoke and flames are visible.

A small business jet, Famous Airlines, taxiing out from Apron 3 along Twy C was in the path; the pilot is not responding to calls from ATC.

Location Location Location

- Sea Island = apx 3km x 4km
- No need to practice finding the crash scene - YVR regularly drills/tests responses times, and regularly responds all over Sea Island.



Sea Island is 4kms x 3kms

Accidents can happen anywhere within and just beyond perimeters.

Did not focus on trying to find the accident – wanted to focus on actions at the scene. YVR responders are dispatched to incidents all over Sea Island, almost daily, so locating and accessing an incident location is not a challenge.

Location Location Location



- No time constraints / operational pressures
- Set participants up for success

Apron III on our southside provided us with an area that was not subject to daily operational pressures, allowing us to test and practice without worrying about having to vacate / return to service the area (e.g. previous exercises had public roads or runways closed for periods of time – these time-sensitive closures create extra pressure, taking away from the learning experience – those pressures likely won't be there during a major incident as the area would be closed for an indefinite period of time).

Exercise GEMINI – London Air Center Apron III



- Lots of space to 'play'
- Pre-determined staging, MCP location, access routes

Apron III provided lots of space to set-up.

Exercise GEMINI – WestJet Hangar Apron III



The hangar provided lots of space for all participants to base themselves out of.

Exercise GEMINI – WestJet Hangar Apron III



Putting all of the responding agencies, the volunteers, and the organizers under one roof allowed us to streamline the briefings and meals.

Volunteers



- 80 vollies total
- 20 injured
- 20 uninjured
- 10 deceased
- Up to 30 in coordination roles
- An additional 100 vollies playing patients / survivors at the hospitals
- Moulage – next slide



Moulage



Consideration for future exercise: practice with persons with real disabilities.

Moulage



Moulage



Operational Phases of the Exercise – Phase I



Phase I 90mins	Unified Command	Fire suppression + rescue	Staging	Triage + transport
Hot wash debrief				
Phase II 90mins	Evidence preservation	Investigation	Interviews	Business resumption

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Mobile Aircraft Firefighting Trainer (MAFT) allows for responders to practice approaches and flame knockdowns.

Phase I – Fire Suppression and Rescue



Phase I – Triage



Phase I – Staging



Phase I – Unified Command



- Unified, but tactically orientated

Typically during the early stages of a major incident, the Leads for each agency are wearing multiple hats and are very busy being tactical. When additional resources show up, agency Leads can hand-off the tactical and move into a more strategic role, and then eventually move 'under one roof' (Mobile Command Post).

Phase I – Unified Command



- Unified, transitioning to strategic

Phase I – Unified Command



- External pressure required to move leads into MCP

YVR's Mobile Command Post

Requires resources to move into position and open up, and should not be expected within the first 60-90mins of a major incident.

Phase I – Unified Command



- Unified, strategic
- Each agency listed the problems the incident had given them to solve.
- Do you have enough resources to solve your problems?

Once under one roof, multi-agency goals can be shared.

If agency Lead is still involved in tactical decisions, it can be a very difficult juggling act.

Worked well and agencies took back to their own what worked rather than what didn't.

Operational Phases – Hotwash Debrief



Phase I 90mins	Unified Command	Fire suppression + rescue	Staging	Triage + transport
Hot wash debrief				
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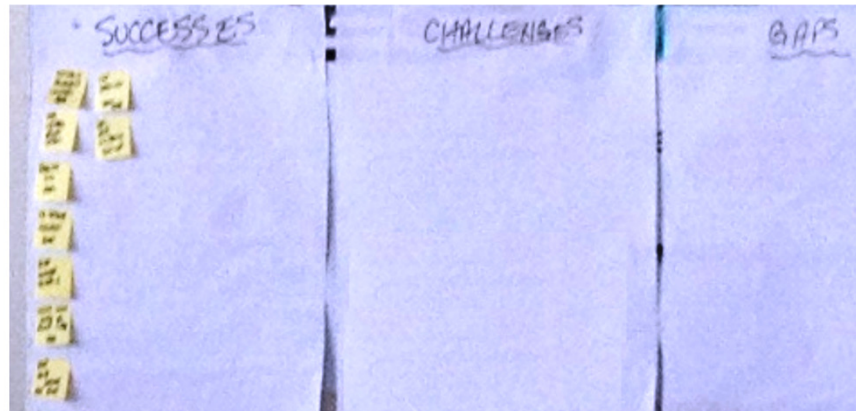
Hotwash



SUCCESSSES

CHALLENGES

GAPS



Successes, Challenges, Gaps

Operational Phases – Phase II



Phase I 90mins	Unified Command	Fire suppression + rescue	Staging	Triage + transport
Hot wash debrief				
Phase II 90mins	Evidence preservation	Investigation	Interviews	Business resumption

Challenges – Investigations



- RCMP, TSB, Coroner participated in Unified Command
- Greatly improved transition from response to recovery

Similar to ICS shared / applied training, organize same for TSB, ERS, RFR, RCMP and ASOs/S1s

Challenges – Evidence Preservation



Recommendations



Recommendation #1

Develop guidelines and information useful for front line staff in the terminals, to better assist them in dealing with the public and media during and immediately after a major emergency at YVR.

Large numbers of people in the terminal will be looking for information during and after a major emergency at YVR. Since accurate information on an emergency situation and response may not be immediately available, the creation of standardized incident information (to be distributed to tenants in advance) will help prepare all frontline staff for dealing with the public during emergencies.

Action: YVR to draft a basic information document to be shared with Airport staff as part of their response plans.

Recommendations



Recommendation #2

Develop an effective method of establishing Unified Command during Emergency Response at YVR.

During the exercise, the first responder representatives (at the crash scene) successfully operated in Unified Command by effectively communicating priorities, coordinating and sharing resources, and conducting regular updates. The agencies present could see the benefit of following this process in the future, and would like to ensure this practice is shared and fully implemented.

Action: Vancouver Airport Authority to set standard protocols for basic Unified Command, and then convene a Unified Command Working Group to implement this multi-agency process.

Recommendations



Recommendation #3

Increase the understanding amongst first responders of the impact of their actions on the Investigative Agencies that must also conduct their work at an emergency scene.

Following the 2013 full scale exercise, an Investigative Agencies Working Group clarified jurisdictional authority and identifying scene access requirements. This was exercised in the 2015 exercise, where it was determined that there is now a need to better articulate this information to all response agencies. An opportunity exists to strengthen the relationships between these agencies through discussion, drills, and tabletop exercises on this subject.

Action: The Investigative Agencies Working Group to develop a program of awareness for first responders of the impact their actions and how it affects Investigative Agencies.

Recommendations



Recommendation #4

Mitigate secondary impacts for passengers, friends and family involved in an aircraft crash event.

Processing the uninjured and coordinating the friends and family of passengers after an aircraft crash takes considerable time and resources. The current draft of the Post Event Passenger Processing plan was successfully exercised; further development of this plan, including the Family and Friends portion, would better prepare airport staff to manage affected travelers and their families.

Action: YVR to expand on and finalize the Post Event Passenger Management plan along with detailed directives to be distributed to airport tenants, staff and response agencies.

Recommendations



Recommendation #5

Improve the availability of guidelines and reference materials for agency responders attending the YVR Airport Authority Emergency Operations Centre (EOC).

During this exercise it was learned that there is a need to improve understanding and communications amongst participants within the EOC, as well as with agencies outside of the EOC. The YVR EOC operates under the Incident Command System (ICS) format, which is not entirely familiar to all agency representatives responding to the EOC. It is important to have guidelines and checklists available upon arrival for persons using the EOC.

Action: YVR will:

- ***develop materials to be made available to those working in the EOC***
- ***host familiarization sessions during non-emergency situations with agencies that need to attend the EOC***
- ***conduct drills and/or Tabletop discussions to practice functional EOC set up and communication flow during emergencies***

Next Exercise



Phases I + II 120mins Morning	Coaching
Break 90mins	Hot wash debrief Lunch
Phases III + IV 120mins Afternoon	Testing
Debriefs	Hot wash Intra-agency Multi-agency

Considering holding two exercises on the same day, coaching in the morning session, testing during the afternoon session.

Similar to ICS shared / applied training, organize same for TSB, ERS, RFR, RCMP and ASOs/S1s

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