

Drones (RPAS)

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Toronto Pearson

Why Drones are a Concern

Why are drones a concern to aviation?



Why Drones are a Concern

Recreational users flying in restricted zones



- No flying 5.6 km around an airport
- No flying above 400 ft

Why Drones are a Concern

People wishing to use drones for nefarious reasons



Drone mounted with missiles

Nefarious actors will use these to cause harm at an airport or other facility.

Why Drones are a Concern

People wishing to use drones for nefarious reasons



Drones with mounted guns

Why Drones are a Concern

- Autonomous Drones



- Fly long distances
- No one controlling. Set target and it may be impossible to track.
- Carry heavy payloads

Recent Events Involving Drones

London Heathrow

- September 10, 2019

*Disruption by protesters
over climate change*



Recent Events Involving Drones

Saudi Aramco

- September 14, 2019
- 10 armed drones

Nefarious actors



Recent Events Involving Drones

Teterboro, New Jersey

- January 22, 2019
- Lasted 90 minutes

Disruption



How Could Airports Manage Drones

How were airports going to address this very real problem?

- Executives and Board members were concerned.
- Travelers were concerned.
- Responders were concerned.



Regulations

- The Canadian Aviation Regulations prohibit anyone from taking down an aircraft. (Drones are considered aircraft).
- Legislative changes would be required to allow for proper mitigation measures.

Challenges Faced by Airports

Who owns the response?



There were questions as to whether it was an airport responsibility or Nav Canada as they manage the airways.

Challenges Faced by Airports

How do we work with all partners on and off the airport as well as the regulators to ensure an adequate response?



Challenges Faced by Airports

What equipment do we need?



Signal Jammers



Netting Gun



*Drone Tracking &
Netting System*

Challenges Faced by Airports

Funding

- How do we fund it?
- How much will the initial cost be?
- What will be the ongoing cost?



Is this a safety or a security issue?

The answer is both:

- Recreational flyers are a safety issue
- Nefarious actors are a security issue



“It is ultimately about protecting people”

Approach

- Toronto Pearson took the position that we cannot wait
- We must take ownership and develop a response strategy
- Focus on a short , medium and long term strategy

Executive Approvals

- Present the problem to the senior executive team:
 - Safety of aircraft and passengers
 - Security of airport infrastructure
 - Reputation if we do not take action and something happens
- Provide a timeframe to research solutions and a potential budget
- Report progress regularly



Board of Directors (BOD)

- Given the global attention to drones, it was important to ensure the board knew what we were doing.

The board appreciated the proactive approach:

- Concerned for reputation
- Needed to know that the airport was doing something to address problem
- Wanted to be updated once a plan was developed
- Fully supportive of funding request

Approval of Drone Funding

Approvals

The Board approved the following funding:

- They committed funds for short term and long term.
- Short term: \$300,000 annually to operate the program
- Long Term: 1-1.5 million dollars for long term plan and the continuation of the required O&M costs.

Where we started

Implemented a Drone Task Force

Objective: Engage all partners to ensure alignment while ensuring an effective response.

Members:

- Police
- Nav Canada
- Transport Canada
- Security
- Drone specialists
- Airport Safety Team

Where we started

Focus

- Short, med and long term solutions for drone mitigation.
- Equipment
- Continue efforts to adjust regulations.
- Develop a drone response protocol focused on the protection of life and continuity of operations at Toronto Pearson.

Legislation

Recent legislation changes by the Canadian Government:

- Drones of 250g to 25 kg must be registered
- Drone exclusion zone increased to 5.6 km
- Restricted under 400 feet
- Increased fines

Although, well intended people who do not follow rules or whom are nefarious actors are still a problem

Task Force Recommendation

Developed a medium term solution

- Purchased drone tracking systems.
- Signed an agreement with Falcon Environmental for the monitoring and response to drones under the guidance of GTAA security and Peel Police(unified command).
- Draft guidance material received from Transport Canada.
- Regulations have not changed, however, take down of drones can be done under the Criminal Code of Canada, section 25.
“immediate threat to life “, under the authority of local police.

Location of Drone

Off Airport



VS

On Airport



Incident Command – Critical Element



Toronto Pearson

- Incident Command will be unified between airport police and Security response.
 - Security will focus on airport operation
 - Police will focus on the drone mitigation



Opportunities Moving Forward

We need to work together with:

- Technology companies to advance technologies to meet our needs
- Regulators to ensure that regulations give us the ability to manage these incidents.
- Airports to learn from each other on viable long term solutions.

If we work together we can ensure technology exists to meet our needs at an affordable cost. (economies of scale)

Opportunities Moving Forward

What types of equipment should be used?

- Expense
- Durability
- Longevity
- Effectiveness



Opportunities

- Multiple agencies are developing guidance material
 - Blue Ribbon Task Force
 - Airport Council International
 - International Air Transportation Association
 - International Civil Aviation Organization
 - United Kingdom
- Nothing is centralized which will lead to confusion. (Which guidance should I follow)

Global Vision

To ensure alignment / share information, we have formed or participate in the following task forces.

World Standing Security Committee:

- This committee has security specialist form around the world.

Canadian Airports Council

- Security personnel from across Canada

Local task force(Toronto Pearson)

- Security, regulators, police, airport personnel and Nav Canada

Long Term Strategy

Over the next 12 -18 months, develop long term Strategy.

How:

- Learn from task force groups.
- Continue to work with regulators in a proactive manner.
- Speak with technology manufacturers and test equipment.
- Monitor what and does not with our system.
- Review operational process and update as required.
- Share information with partners.
- Operationalize with Partners.

An aerial photograph of the Toronto Pearson International Airport. The central focus is the large, modern terminal building with a curved, glass-and-steel facade. Surrounding the terminal are extensive parking lots filled with cars, and several runways and taxiways. In the background, the city skyline of Toronto is visible under a clear sky. A semi-transparent white banner with a blue gradient is overlaid across the top of the image, containing the text 'Thank You'.

Thank You

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