

# **Aerial Photography in Accident Investigation**

**Presented by: Mr Ng Junsheng  
Air Accident Investigator,  
AAIB Singapore**

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# Scope

- **Considerations for Aerial Photography**
- **Currently available technology**
- **AAIB's Equipment**
- **Deployment Experience**
- **Factors/Issues to Consider**

# Considerations for Aerial Photography

- **Aerial photograph useful for**
  - **Performing initial survey of crash site**
  - **Aids decision making on investigation planning**
  - **Locate likely hazards posed to investigators**
- **UAV reduces the need for helicopters to be deployed to perform aerial photography**
- **Suitability to deploy UAV**

# Currently Available Technology

- Various Unmanned Aerial Systems available



- Autonomous flight using software
- Stitching photographs to obtain full aerial view
  - Fisheye camera creates distortion
  - Errors in stitched photos

# AAIB's Equipment

## ➤ 2 platforms



**Customised UAV**



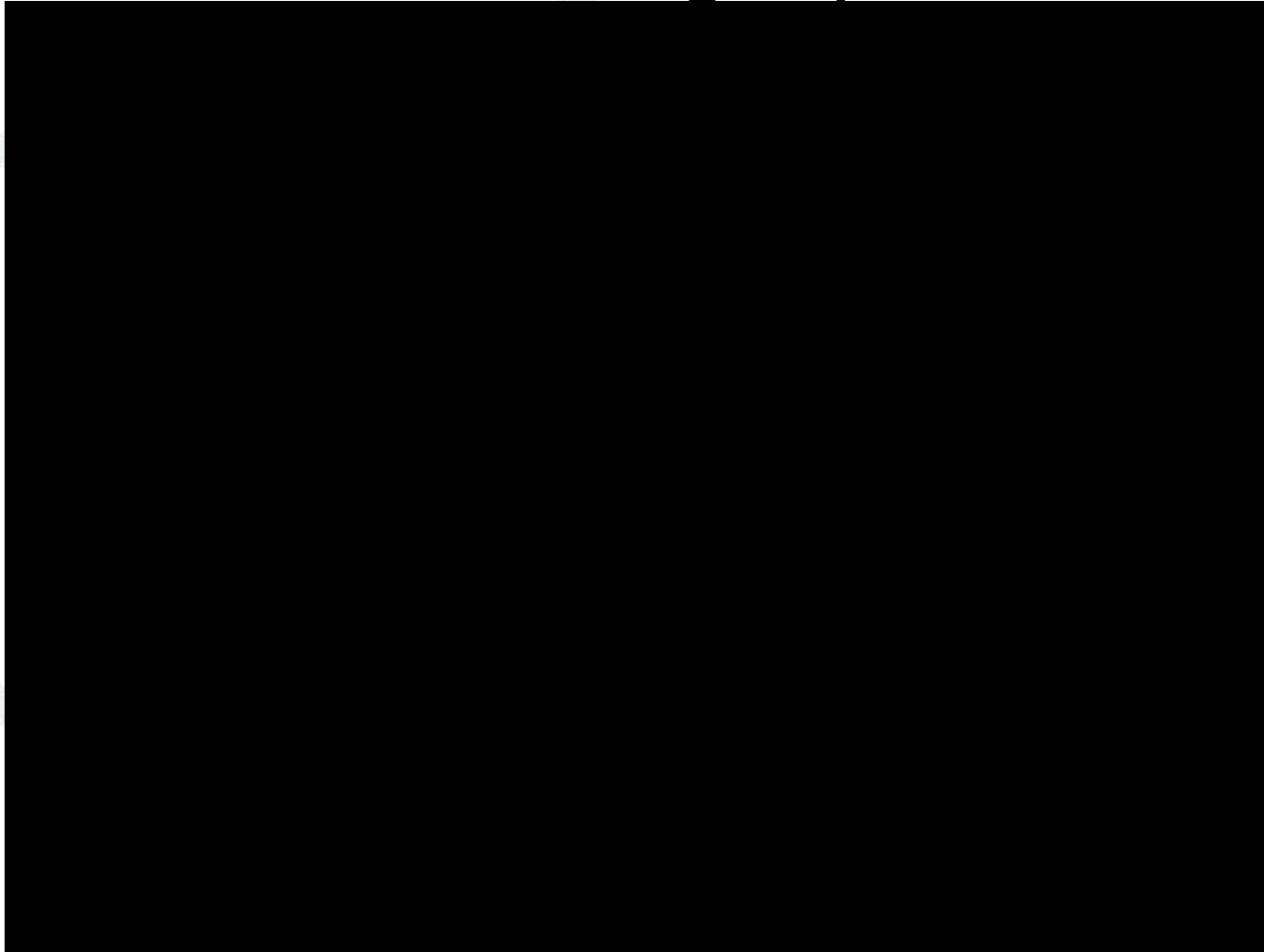
**DJI Phantom 2**

## ➤ Differences:

- Maximum wind operating condition
- Amount of manual control allowed
- Levels of redundancy available
- Ability to customise UAS

# AAIB's Equipment

- Video of DJI customised flight operation



Video courtesy of DJI

# AAIB's Equipment

- **Autonomous flight using software**
- **Photo stitching is achieved using commercially available software**
- **Generated image can be mapped on Google Earth**
- **AAIB exploring 3D model creation using aerial images**





# Factors to Consider

➤ **Common problems faced with UAV operation includes:**

- **Crashes**
  - **Metallic structures causes GPS signal reflection**
  - **Poorly assembled/maintained UAV**
- **Wifi interference**
  - **GoPro camera or other devices on 2.4Ghz interferes with command signal sent from ground controller**
- **Augmented flight handling creates false sense of competency**



# Factors to Consider

- **Challenges to transport equipment:**
  - **Li-Po battery**
    - **Restrictions on carriage of Li-Po battery**
    - **Limited capacity & limited quantity**
    - **Reduced flight time**
  - **Bulky and heavy when packed**
- **Insurance for 3<sup>rd</sup> party damage liability**
- **Training of UAV operator, in particular fully manual flight**

# Conclusion

- **UAVs are commonly available and reasonably priced**
- **Can be operated autonomously without much flying experience**
- **Useful equipment but be aware of pitfalls**

**Thank You**