

<b>MUNICIPAL DISTRICT OF SPIRIT RIVER NO. 133</b>  <b>POLICY AND PROCEDURES MANUAL</b>  <b>Unmanned Aerial Vehicle (UAV) Policy</b>	<b>Function:</b>  <b>Policy No.</b> <b>Effective Date:</b> <b>Supersedes:</b> <b>Amends:</b>	<b>Agriculture Services</b> <b>ASB.28</b> <b>September 18, 2018</b>  <b>New</b>
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**Policy Purpose:** The intent of this policy is to establish guidelines and procedures for the safe use of an UAV to meet all provincial and federal rules and regulations while providing a reliable tool to the Municipal District.

**Policy Statement & Guidelines:**

A UAV can be a great tool for quickly viewing an area by air to obtain information related to weeds, beaver dam blockages, measuring stockpiles, preparing promotional videos, assessing emergency scenes and many others. UAV can be dangerous to other aerial vehicles if not used properly by licensed operators.

The UAV owned by the Municipal District will only be operated by trained and licensed pilots within the Federal and Provincial rules for the benefit of the municipality.

Other emergency services or agencies may request approval for the use of the UAV and pilot for a special purpose; the Chief Administrative officer may approve the use of the UAV and Pilot if they believe it is in the best interest of the municipality or for preservation of human life.

The Agricultural Services Department will maintain current emergency response plans and guidelines attached as appendix "A" and reviewed annually for completeness.

# **EMERGENCY RESPONSE PLAN**



# **DISABLED UAV**

## **DISABLED UAV**

In the event of a disabled UAV:

Follow Emergency Response Procedures specific to the UAV emergency.

- i. Command and Control Link Failure Response Procedure
- ii. UAV is no longer under control of the operator Response Procedure
- iii. UAV inadvertently flies into controlled airspace Response Procedure
- iv. Loss of Visual Contact Procedure;
- v. Emergency Landing/Ditching Procedure
- vi. First Responders Procedure
- vii. Control Station Failures Procedure
- viii. UAV Lateral Fly Away Response Procedure
- ix. UAV Vertical Fly Away Reponse Procedure
- x. All other UAV Fly Aways (Vertical and/or Horizontal) Response Procedure
- xi. Operation of the Flight Termination System Procedure



## **EMERGENCY PROCEDURE 1.01**

### **UAV Command and Control Link Failure Response Procedure**

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Department: Agricultural Services Department

Date Implemented: Sept 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Command and Control Link Failure Response Procedure.

#### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is in a Command and Control Link Failure situation.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. In a situation where a Command and Control Link Failure and the UAV is neither moving vertically nor horizontally, turn off the primary control station and turn on secondary control station.
2. Once the secondary control has been turn on establish communication with UAV.
3. Once establish initiate landing procedure for retrieval in a safe location.
4. Inform the Operations Manager/ Grounds Supervisor.
5. Complete all documentation required by the municipality and Transport Canada.

**If Command and Control Link Failure is not resolve through auxiliary system**

- 1. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply and the UAV lands or ditches.**
- 2. Inform the Operations Manager/ Grounds Supervisor**
- 3. Complete all documentation required by the municipality and Transport Canada.**
- 4. Do not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV Command and Control Link Failure.**

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ASB Chairman

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Agricultural Fieldman



## **EMERGENCY PROCEDURE 1.02**

### **UAV Not Under Operator Control Response Procedure**

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Not Under Operator Control Response Procedure.

#### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is not under Operator Control.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. In a situation where a UAV is not under operator control and the UAV is neither moving vertically nor horizontally, turn off the primary control station and turn on secondary control station.
2. Once the secondary control has been turned on establish communication with UAV.
3. Once establish initiate landing procedure for retrieval in a safe location.
4. Inform the Operations Manager/ Grounds Supervisor.
5. Complete all documentation required by the municipality and Transport Canada.
6. Do not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV not under Operator Control.

**If Control Failure is not resolve through auxiliary system**

- 1. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply and the UAV lands or ditches.**
- 2. Inform the Operations Manager/ Grounds Supervisor**
- 3. Complete all documentation required by the municipality and Transport Canada.**
- 4. Do not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV not under Operator Control.**

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**ASB Chairman**

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**Agricultural Fieldman**



## EMERGENCY PROCEDURE 1.03 UAV Inadvertently Flies Into Controlled Air Space Response Procedure

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Department: Agricultural Services Department

Date Implemented: Sept 10, 2018

Last Reviewed:

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### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of a Unmanned Aerial Vehicle (UAV) Inadvertently Flies Into Controlled Air Space Response Procedure.

### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV Inadvertently Flies Into Controlled Air Space situation.

### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. In a situation where a UAV inadvertently flies into controlled air space, the operator shall immediately land the UAV according to Emergency Landing and Ditching Procedures.
2. Inform the Operations Manager/ Grounds Supervisor.
3. Complete all documentation required by the municipality and Transport Canada.

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ASB Chairman

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Agricultural Fieldman





## EMERGENCY PROCEDURE 1.04 Loss of Visual Contact Response Procedure

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Loss of Visual Contact Response Procedure.

### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Loss of Visual Contact during Operation of a UAV occurs.

### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. In a situation where a Loss of Visual Contact with the UAV occurs, the operator shall immediately let go of the controls as the unit will immediately stop and hover.
2. Confer with both remotes and screens on the location of the UAV.
3. If visual contact is not reestablished, the operator or other staff will grab the binoculars from their vehicle and look for the drone and any hazards in the area.
4. If visual is still not established, avoid hazards identified and proceed with the automatic recall.
5. Inform the Operations Manager/ Grounds Supervisor.
6. Complete all documentation required by the municipality and Transport Canada.

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ASB Chairman

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Agricultural Fieldman



## **EMERGENCY PROCEDURE 1.05**

### **Emergency Landing /Ditching Procedure**

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Emergency Landing /Ditching Procedure.

#### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Emergency Landing /Ditching during Operation of a UAV is necessary.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The operator of the UAV shall:

1. In situations where an Emergency Landing /Ditching with the UAV are necessary, the operator shall immediately identify all hazards previously identified during preflight procedure.
2. Confer with both remotes and screens on the location of the UAV.
3. Attempt to land the drone as safely as possible to avoid property damage and injury.
4. Inform the Operations Manager/ Grounds Supervisor.
5. Complete all documentation required by the municipality and Transport Canada.

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ASB Chairman

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Agricultural Fieldman



## **EMERGENCY PROCEDURE 1.06**

### **First Responders Procedure**

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) First Responders Procedure.

#### **SCOPE:**

This procedure pertains to establishing the steps when Contacting First Responders during Operation of a UAV is necessary.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The operator of the UAV shall:

1. In a situation where First Responders are needed, the operator will attempt to land the drone as safely as possible to avoid property damage and injury once an emergency situation has been identified.
2. The operator shall immediately contact the appropriate First Responders.
3. Inform the Operations Manager/ Grounds Supervisor.
4. Assist as trained to their capacities until relieved by appointed personnel.
5. Complete all documentation required by the municipality and Transport Canada.

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ASB Chairman

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Agricultural Fieldman



## EMERGENCY PROCEDURE 1.07 UAV Control Station Failure Response Procedure

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Control Station Failure Response Procedure.

### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is in a Control Station Failure situation.

### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The operator of the UAV shall:

1. In a situation where a Control Station Failure and the UAV is neither moving vertically nor horizontally, turn off the primary control station and turn on secondary control station.
2. Once the secondary control has been turn on establish communication with UAV.
3. Once establish initiate landing procedure for retrieval in a safe location.
4. Complete all documentation required by the municipality and Transport Canada.
5. Not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV Control Station Failure.

**If Control Station Failure is not resolve through auxiliary system**

- 1. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply and the UAV lands or ditches.**
- 2. Inform the Operations Manager/ Grounds Supervisor**
- 3. Complete all documentation required by the municipality and Transport Canada.**
- 4. Do not operate the UAV until the repairs necessary that will ensure non reoccurrence of a Control Station Failure situation.**

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ASB Chairman

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Agricultural Fieldman



## EMERGENCY PROCEDURE 1.08 UAV Lateral Fly Away Response Procedure

Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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### PURPOSE:

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Lateral Fly Away Response Procedure.

### SCOPE:

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is in a Lateral Fly Away situation.

### OPERATION:

Once reported the Operations Manager shall:

1. In a situation where a UAV is operating *outside* 10 nautical miles of Class C, D or E airspace and a loss of control has occurred, or is apparent, and the UAV appears to be travelling horizontally but not climbing, the primary contact shall be the Flight Information Region (FIR) Area Control Center (ACC) Shift Manager (Edmonton 780-890-8397). The secondary contact shall be the appropriate Flight Information Center (FIC Edmonton 780-890-4739) that at location (GPS LOCATION) loss of control of a UAV in a lateral direction heading (DIRECTION OF TRAVEL) with current velocity of (KNOTS) and at a current altitude of (FEET IN ALTITUDE).
2. In a situation where a UAV is operating *within* 10 nautical miles of Class C, D or E airspace and a loss of control has occurred, or is apparent, and the UAV appears to be travelling vertically but not horizontally, the primary emergency contact shall be Peace River Airport Tower at 780-624-5142. The Secondary in this case shall be the (FIR) Area Control Center (ACC) Shift Manager (Edmonton 780-890-8397) giving them the location (GPS LOCATION) loss of control of a UAV in a lateral direction heading (DIRECTION OF TRAVEL) with current velocity of (KNOTS) and at a current altitude of (FEET IN ALTITUDE).
3. Identify any potential hazard and site that the UAV can encounter and alert the proprietors of the site.
4. Contact the Local Emergency Contacts as necessary under First Responder Response Plan on Page 16.
5. Report any claims to the local RCMP and to the insurance.
6. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. Contact the Operations Manager/ Grounds Supervisor.
2. Confirm Emergency procedure.
3. Establish location of UAV on a Horizontal Fly Away with giving them the location (**GPS LOCATION**) loss of control of a UAV in a lateral direction heading (**DIRECTION OF TRAVEL**) with current velocity of KM/H and at a current altitude of (**FEET IN ALTITUDE**).
4. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply.
5. Complete all documentation required by the municipality and Transport Canada.
6. Not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV Vertical Fly Away

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ASB Chairman

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Agricultural Fieldman



## EMERGENCY PROCEDURE 1.09

### UAV Vertical Fly Away Response Procedure

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Vertical Fly Away Response Procedure.

#### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is in a Vertical Fly Away situation.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. In a situation where a UAV is operating **outside 10** nautical miles of Class C, D or E airspace and a loss of control has occurred, or is apparent, and the UAV appears to be travelling vertically but not horizontally, the primary contact shall be the Flight Information Region (FIR) Area Control Center (ACC) Shift Manager (Edmonton 780-890-8397). The secondary contact shall be the appropriate Flight Information Center (FIC Edmonton 780-890-4739) that at location (**GPS LOCATION**) loss of control of a UAV in a lateral direction heading (**DIRECTION OF TRAVEL**) with current velocity of (**KNOTS**) and at a current altitude of (**FEET IN ALTITUDE**).
2. In a situation where a UAV is operating **within 10** nautical miles of Class C, D or E airspace and a loss of control has occurred, or is apparent, and the UAV appears to be travelling vertically but not horizontally, the primary Emergency contact shall be the Flight Information Region (FIR) Area Control Center (ACC) Shift Manager (Edmonton 780-890-8397). The Secondary in this case should be the Peace River Airport Tower at 780-624-5142 giving them the location (**GPS LOCATION**) loss of control of a UAV in a lateral direction heading (**DIRECTION OF TRAVEL**) with current velocity of (**KNOTS**) and at a current altitude of (**FEET IN ALTITUDE**).
3. Identify any potential hazard and site that the UAV can encounter and alert the proprietors of the site.
4. Contact the Local Emergency Contacts as necessary under First Responder Response Plan on Page 16.



5. Report any claims to the local RCMP and to the insurance.
6. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

7. Contact the Operations Manager/ Grounds Supervisor.
8. Confirm Emergency procedure.
9. Establish location of UAV on a Vertical Fly Away with giving them the location (**GPS LOCATION**) loss of control of a UAV in a lateral direction heading (**DIRECTION OF TRAVEL**) with current velocity of KM/H and at a current altitude of (**FEET IN ALTITUDE**).
10. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply.
11. Complete all documentation required by the municipality and Transport Canada.
12. Not operate the UAV until the repairs necessary that will ensure non reoccurrence of a UAV Vertical Fly Away

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ASB Chairman

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Agricultural Fieldman



## EMERGENCY PROCEDURE 1.10 All Other UAV Fly Away Response Procedure

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Fly Away Response Procedure Vertical and Horizontal outside of 10 nautical miles of Class C, D or E airspace.

### **SCOPE:**

This procedure pertains to establishing the responsibilities and steps when Operation of a UAV is in an All Other Fly Away situation.

### **OPERATION:**

Once reported the Operations Manager shall:

1. In a situation where a UAV is operating *outside* 10 nautical miles of Class C, D or E airspace and a loss of control has occurred, or is apparent, and the UAV appears to be travelling horizontally, vertically or both, the primary contact shall be the Flight Information Region (FIR) Area Control Center (ACC) Shift Manager (Edmonton 780-890-8397). The secondary in this case should be the appropriate Flight Information Center (FIC Edmonton 780-890-4739) that at location (GPS LOCATION) loss of control of a UAV in a lateral direction heading (DIRECTION OF TRAVEL) with current velocity of (KNOTS) and at a current altitude of (FEET IN ALTITUDE).
2. Identify any potential hazard and site that the UAV can encounter and alert the proprietors of the site.
3. Contact the Local Emergency Contacts as necessary under First Responder Response Plan on Page 16.
4. Report any claims to the local RCMP and to the insurance.
5. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The Operator of the UAV shall:

1. Contact the Operations Manager/ Grounds Supervisor.
2. Confirm Emergency procedure.
3. Establish location of UAV on a Lateral Fly Away with giving them the location **(GPS LOCATION)** loss of control of a UAV in a lateral direction heading **(DIRECTION OF TRAVEL)** with current velocity of KM/H and at a current altitude of **(FEET IN ALTITUDE)**.
4. Follow as much as permitted the UAV until such time contact has been reestablished or the UAV has drained power supply.
5. Complete all documentation required by the municipality and Transport Canada.
6. Not operate the UAV until the repairs necessary that will ensure non reoccurrence of an UAV Fly Away.

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ASB Chairman

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Agricultural Fieldman



## **EMERGENCY PROCEDURE 1.11**

### **Operation of Flight Termination System Procedure**

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Department: Agricultural Services Department

Date Implemented: September 10, 2018

Last Reviewed:

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#### **PURPOSE:**

To conform to the Special Flight Operation certificate regarding the establishment of an Unmanned Aerial Vehicle (UAV) Flight Termination System Procedure (FTSP).

#### **SCOPE:**

This procedure pertains to establishing the steps in the event that all contingencies have been exhausted and further flight of the aircraft cannot be safely achieved, or other potential hazards exist that require immediate discontinuation of flight.

#### **OPERATION:**

Once reported the Operations Manager shall:

1. Report to Transport Canada Prairie and Northern Region via email at [NRspecialflightops@tc.gc.ca](mailto:NRspecialflightops@tc.gc.ca) any occurrences listed in the certificate which includes, but not limited to, near misses, incidents and accidents.
2. Report any claims and accidents to the local RCMP and to the insurance

The Ground Supervisor shall:

1. In the Absence of the Operations Manager, fulfill their duties

The operator of the UAV shall:

1. Identify the closest safe locations identified during the preflight procedure as a Controlled Flight into Terrain (CFIT).
2. Direct the UAV towards that location in a situation where all contingencies have been exhausted and perform the CFIT.
3. Inform the Operations Manager/ Grounds Supervisor.
4. Assist as trained to their capacities until relieved by appointed personnel.
5. Complete all documentation required by the municipality and Transport Canada.

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ASB Chairman

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Agricultural Fieldman