

# **AirSTAR Project**

GTMP-2038

## **Emergency Response Plan**

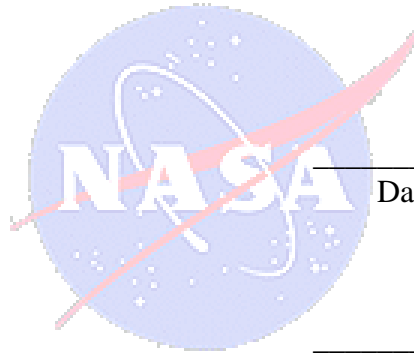


\_\_\_\_\_  
(b) (6)  
Operations Safety Supervisor

\_\_\_\_\_  
Date

REVIEWED:

\_\_\_\_\_  
(b) (6)  
Chief Engineer



\_\_\_\_\_  
Date

\_\_\_\_\_  
(b) (6)  
Turbine Pilot Training Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
(b) (6)  
Project Sponsor

\_\_\_\_\_  
Date

\_\_\_\_\_  
(b) (6)  
LaRC Aviation Safety Officer

\_\_\_\_\_  
Date

\_\_\_\_\_  
(b) (6)  
OSEMA


\_\_\_\_\_  
Date

APPROVED:

\_\_\_\_\_  
(b) (6)  
Project Manager

\_\_\_\_\_  
Date

## CHANGE HISTORY LOG



# AirSTAR Project Emergency Response Plan

## INDEX

Cover Sheet.....	2
Revision Sheet.....	3
APPLICABILITY.....	5
Updating of Procedures.....	5
Purpose.....	6
1.1 Up-to-Date Documents .....	7
1.2 Contact Information .....	7
1.3 Verify Latest Revision .....	7
1.4 Crash Site Manager.....	8
2.0 When and Who to Contact.....	8
2.1 Emergency Vehicles .....	8
2.2 NASA Contacts.....	9
3.0 Plan Implementation .....	9
3.1 AirSTAR Investigation Team .....	9
3.2 Aircraft Power.....	10
3.3 Transmitter.....	10
3.4 Information for ASO.....	10
4.0 Crash Site Management Prior to ASO Arrival .....	10
4.1 Providing for Immediate Emergency Medical Assistance.....	11
4.2 Ensuring the Site Is Safe .....	11
4.3 Ensuring the Site Is Preserved .....	11
4.4 Commencing the Investigation .....	11
4.5 Quarantine Area and Information .....	11
5.0 AirSTAR Project Safety Officer .....	12

## **APPLICABILITY**

**All personnel working on or involved with this project shall read the Emergency Response Plan. Those that continue with the project shall periodically review this plan to assure continued compliance. The reviewing schedule shall be at least once a year during times of active project flying. In addition these procedures shall be reviewed within ninety days of all research flights.**

## **Updating of Procedures**

This plan shall be updated when lessons learned or experience demonstrates the need for change. Other reasons include but are not limited to meeting mandatory rules and regulations that govern search or rescue type operations.

Changes shall be divided into one of three categories.

1. Grammatical or punctuation changes. These changes shall be reviewed by at least one person whose signature is on the sign-off sheet, other than the person making the modification to this document. These changes shall be highlighted for easy identification.
2. Words or sentences added to clarify an existing statement or more accurately depict an existing procedure. At least two groups or persons whose signature is on the sign-off sheet, other than the person making the modifications to this document, shall review these changes. If both agree that the changes made only clarify an existing procedure or action a revision shall be issued with no additional review. If either has reservations, the document shall be sent out for review by all groups or persons on the sign-off sheet. These changes shall be highlighted for easy identification.
3. New or modified procedures or policy that changes deletes or creates a new direction from that of the existing plan. These changes shall be submitted for approval by all groups listed on the sign-off sheet, prior to being incorporated into the emergency response and safety process. These changes shall be highlighted for easy identification.

## Purpose

The objective of this plan is to set forth guidelines and instructions that cover model aircraft mishap response. Our intent is to provide safe recovery and documentation adequate for determining the cause, decisions and reasons that led to the mishap.

This document does **NOT** supersede or replace LMS-OP-0939 "Aviation Accident Reporting, Investigation and Site Management Plan"

This plan does try to identify areas that are unique to the flying of remotely piloted model aircraft and unmanned model aircraft. These differences create situations that need additional clarification and/or direction for project personnel. Should any condition arise that is not covered by LMS-OP-0939 or this procedure, GTMP-2038, the Aviation Safety Officer (see Section 1.2) at NASA Langley shall be contacted for direction.

## **1.0 LMS-OP-0939**

LMS-OP-0939 shall be the primary document covering the emergency response plan for the AirSTAR Project. The Aviation Safety Officer (see Section 1.2) shall authorize any deviation from LMS-OP-0939. Expected areas of deviation are based on flying model aircraft at remote sites and issues that are unique to the operation of a remotely piloted vehicle (RPV) or an unmanned aerial vehicle (UAV).

### **1.1 Up-to-Date Documents**

LMS-OP-0939 Revision E is the current LARC standard for accident reporting, investigation and site management. This project shall comply with all applicable procedures set in place by this LMS document. GTMP-2038 shall address issues specific to the project's remotely piloted model aircraft not covered in the LMS-OP-0939. A copy of both documents shall be on hand at the flight site at all times. It is important to maintain an up-to-date copy. See Section 1.3.

### **1.2 Contact Information**

Emergency contact for the AirSTAR Team is the Aviation Safety Officer (ASO); the current ASO is (b) (6) at 757-864-7816. After hours phone numbers are listed in Section D of LMS-OP-0939 document under emergency call list. In the absence of the ASO Section B of LMS-OP-0939 procedures lists the possible alternates. The AirSTAR project will be flying at Aberdeen Field in Smithfield, VA and at Wallops Flight Facility. Due to these remote locations, the ASO shall communicate with a temporary Crash Site Manager until he or his designated replacement can reach the crash site. In addition to the ASO there are other project and branch personnel that shall be contacted at the earliest appropriate time, see Section 2.2.

### **1.3 Verify Latest Revision**

An up-to-date copy of LMS-OP-0939 and GTMP-2038 shall be on hand at the flight test sight. The AirSTAR Operations Safety Supervisor (OSS) shall verify that the revisions of both documents match the latest available documents on their respective sites. The OSS shall inform team members of any changes at the preflight safety meeting.

Each week flying operations take place the LMS web site shall be visited to check revision status. The latest copy can be found by going to the LARC LMS web site, selecting "Search LMS Site" typing the document number "LMS-OP-0939" and then select the "Search" button. If the revision has not changed there is no need to print a new copy. When a new revision is available it shall be printed, dated and then used to replace the older revision.

Each week flying operations take place for the AirSTAR project; the GTM web site on AeroCompass shall be visited to check revision status. The latest copy can be found by going to the AeroCompass web site at <http://aerocompass.larc.nasa.gov/>. Select login and enter your login name and password, if the GTM Approved folder is available select it, if not you must get your name added to the approved list. After selecting the GTM Approved folder, select the visit button. Then select the 2000 Project Level Safety Document folder. There you will find the latest approved copy of GTMP-2038. If the revision has not changed, there is no need to print a new copy. When a new revision is available, it shall be printed, dated and then used to replace the older revision.

The last sheet of this document is a sign off sheet that shall be used by the OSS or his/her designated replacement. After the revision status of documents LMS-OP-0939 and GTMP-2038 are verified this sheet will be dated, initialed and current revisions recorded. This shall be done each week in which flying activities take place.

#### **1.4 Crash Site Manager**

The OSS shall be responsible for contacting the ASO in the event of incident. The OSS shall function as the Crash Site Manager until the ASO or his or her representative arrives at the crash site. The OSS shall take direction from the ASO until he or she is relieved of responsibility as the Crash Site Manager.

### **2.0 When and Who to Contact**

If emergency help is required, the OSS or designee shall contact the appropriate fire department. The OSS shall provide the information required for the deployment of the appropriate emergency vehicles.

The ASO shall be contacted immediately if any of the following occur:

- A call for emergency assistance vehicle.
- Injury resulting in death.
- Injuries requiring hospitalization.
- Injury to anyone not connected to the project.
- Damage to any vehicles, buildings or structures.
- Damage to any property not owned by NASA.
- Any injury, property damage or close call that could be considered high profile, picked up by the press or any public media.
- Structural damage to training or research model aircraft. (This does not include Commercial Off the Shelf (COTS) models or COTS models that have been modified. Damage to landing gear components, doors, hatches, tires, abrasions or cosmetic damage are not items that warrant ASO involvement.)

#### **2.1 Emergency Vehicles**



In the event of a fire or injury requiring immediate medical attention, the local fire department shall be contacted. The fire department will already be aware of the location and operation based on our Test Site Check List GTMP-2003 that stipulate the local fire department shall be informed of flying operations prior to all flight activity. Should the numbers below ring busy or no answer, 911 can be used to get emergency assistance.

### **2.1.a Flight Operations at Wallops Flight Facility**

The Wallops Island Fire Department monitors FM 1 on the radios used for communications at Wallops Island during flight-testing. The phone number for the Wallops Island Flight Facility Fire Department is 757-824-1665 from a cell phone or 1665 from any phone at Wallops Island.

### **2.1.b Flight Operations at Aberdeen Field Smithfield**

The phone number for the Smithfield Fire Station is 757-357-3231. This is a voluntary fire station if there is no answer hang-up and dial 911.

## **2.2 NASA Contacts**

The OSS shall also contact the following NASA personnel at the earliest appropriate opportunity.

(b) (6)	757-864-4035	Technical Monitor
(b) (6)	757-864-6014	System Engineering Dir.
(b) (6)	757-864-4642	Aeronautics Sys. Eng. Branch
(b) (6)	757-864-3894	Aeronautics Sys. Eng. Branch

## **3.0 Plan Implementation**

This plan shall be implemented to preserve information that will aid in the investigation of causes, reasons, events and decisions that may have led to any mishap. Every effort shall be made to maintain the integrity of all information and the crash site.

### **3.1 AirSTAR Investigation Team**

In the preflight safety meeting the OSS and two other individuals shall be appointed as the AirSTAR Investigation Team (AIT). The OSS shall lead the investigation team and be responsible for the decisions and actions of the team. In the event of a model aircraft incident, the AIT shall be the only individuals authorized to be in close proximity of the model aircraft. They shall evaluate the situation and make the decision on the next appropriate action to be taken. To best preserve the crash site only these three individuals shall advance to the incident site. If they decide additional help from the AirSTAR

team is needed they shall instruct the appropriate individuals in what needs to be done. A cell phone or radio shall be in the possession of the investigation team as they address the crash site.

If a fire is present at the crash site, the team shall approach the vehicle from the upwind direction. All members of the AIT shall be trained in the use of fire extinguishers. These individuals are not professional fire fighters and shall use common sense prior to attempting to put out any fires. If the fire is large or there are other circumstances that represent a threat to the safety of the AIT individuals, the team shall retreat to a safe position and wait for the professional fire fighters to arrive.

### **3.2 Aircraft Power**

Once the model is designated as safe for hands on examination, the power switch or switches shall be turned to the off position. This will preserve the state of the battery or batteries for the investigation and de-energize all aircraft components. The time at which the battery switches are turned off shall be noted.

### **3.3 Transmitter**

The transmitter is generally turned off after the power switches on the model are turned off. If there is a vehicle fire, the transmitter shall be turned off immediately. If there is no fire, then the normal shutdown procedures shall be followed. After the transmitter is turned off, it shall be placed in its carrying case and quarantined until the investigation team releases it for use.

### **3.4 Information for ASO**

Section "D" of LMS-OP-0939 covers information that will be needed. If there are individuals that may be transported for emergency treatment, the following information shall be collected as early as possible:

- Name
- Hospital or care center
- Individual's phone number
- Individual's address
- Type of injury if known

## **4.0 Crash Site Management Prior to ASO Arrival**

In section "C" of LMS-OP-0939 there are four areas of crash site management that need to be addressed. Some of these can wait until the ASO arrives, some cannot.

#### **4.1 Providing for Immediate Emergency Medical Assistance**

Anyone in need of emergency medical assistance shall be provided for, regardless of the arrival of the ASO. Do not hesitate to get emergency assistance if it is possible that any individual has serious injury.

#### **4.2 Ensuring the Site Is Safe**

The greatest potential hazard from these model aircraft is a fire. Fire can be caused by the engine temperature, damage to the fuel tanks or lines and/or damage to the lithium batteries. Do not assume if there are no flames a fire cannot start. Damage to battery covering can cause a fire and ignite the fuel. Caution must be used at all times after an incident.

#### **4.3 Ensuring the Site Is Preserved**

Preserving the site of any mishap is important and shall be done where possible. There are reasons that may cause site preservation to be impractical or even impossible. For example, the runway at Aberdeen Field may need to be cleared for an aircraft that needs to land. At Wallops, the crash could be on the beach area and the tide is coming in. If the model aircraft must be moved prior to the arrival of the ASO, the ASO shall be contacted and photographs taken for documentation. The photographs shall be taken with the intent of aiding any investigation that may take place. A disposable camera shall be available in the operations trailer to take photographs of the crash site.

#### **4.4 Commencing the Investigation**

The AirSTAR team is not responsible for starting a formal investigation but if requested we shall aid in any way possible. Every effort shall be made to supply all information needed during any investigation. All team members shall provide a written statement detailing any information that is or may be applicable to the investigation by the Mishap Investigation Board (MIB). Written statements shall be signed and dated and to the knowledge of the author totally accurate.

#### **4.5 Quarantine Area and Information**

A roll of yellow security tape shall be available in the operations trailer. The tape shall have bold lettering stipulating "Authorized Personnel". This shall be used to quarantine the crash site until arrival of ASO and/or MIB.

If a MIB investigation is requested, the following steps shall be taken,

All records, checklist, inspection reports, maintenance log, documents, videos, films, pictures, data collection, etc. shall be preserved and turned over to the ASO and/or MIB.

All written statements as described in Section 4.4 will be prepared and delivered to the ASO and/or the MIB.

Flying operations will be suspended pending a new flight release by the ASRB.

## **5.0 AirSTAR Project Safety Officer**

The AirSTAR Operations Safety Supervisor or designee shall gather and record information that may be lost during the span of time between the accident and the arrival of the ASO. Information shall include:

- Pilot and/or Co-Pilot
- Spotter
- Flight Time
- Time incident occurred
- Weather Conditions
  - Temperature
  - Wind speed and direction
  - Wind Gusts
  - Visibility
  - Sun position
- Sudden Changes in Conditions
- Model name and type
- Outside factors, other aircraft
- Time emergency help was requested
- Time emergency help arrived
- Any possible contributing factors
- Observations

