Airswift HSE Management System

Incident Investigation

Important Notice:

1. This procedure is a Controlled Document and shall not be amended without the authority of the Operations Manager – North America.
2. Any queries or feedback concerning the contents of this Procedure should be addressed to the Operations Manager – North America.
3. This procedure is reviewed annually or when there is a change to business practices.
4. This document should be retained indefinitely and only removed should the procedure become obsolete.

Prepared	Reviewed	Approved	EffectiveDate	Issue Number
Carol Stallworth *Name* *Carol Stallworth* *Signature*	*Courtney Rife* *Name* *Courtney Rife* *Signature*	*Sam Cross* *Name* *Sam Cross* *Signature*	12/01/2021	10

Version Number	**Effective Date**	**Author**	**Amendments**	**Reason for Amendments**
1	12/01/2017	Julia Arevalo		Update
2	07/01/2019	Carol Stallworh	Regulatory review	Update
9	12/01/2021	Carol Stallworth	Inc Client Site Flowchart	Inc Client Site Flowchart
10	12/09/2022	Kellie Tetley	None	Annual Review

INDEX

1.1 PURPOSE

Accident prevention and control of hazards is the result of a well designed and executed safety and health program. One of the keys to a successful program includes unbiased, prompt and accurate accident investigations. The basic purpose of these investigations is to determine measures that can be taken to prevent similar accidents in the future. This program addresses:

- Company Policy
- Responsibilities
- Hazard Control
- Role of Supervisors
- Investigation Procedures

2.0 SCOPE

This procedure is applicable to Airswift offices and/or Client project worksites and facilities.

3.0 POLICY

It is the policy of Airswift that an investigation of all work-related accidents, injuries and illnesses is to be conducted in a professional manner to identify the root cause and to develop specific management actions for the prevention of future accidents. In the event of an accident where the Client facility performs an incident report, whilst all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method. Airswift will review and the management team will determine if further investigation is required. All incidents are to be reported immediately including, but not limited to, injuries, spills, property damage, fires, explosions, and vehicle damage. In addition to the incidents listed, it is Airswift's expectation that all near miss incidents be reported and investigated. Airswift is obligated to report any incidents to the fullest extent in line with OHSA regulations.

All reportable incidents must be reported to applicable regulatory agency(s) within the required reporting timeframe, 8hrs for a fatality and 24hrs for an in-patient hospitalization, amputation or loss of eye
All recordable illnesses or injuries shall be recorded on the OSHA 300 Log within 7 calendar days of receiving the information that the injury occurred. Also, all recordable illnesses or injuries will be reported to the client as soon as possible, or in a timely manner (within 24 hours of incident).

The Regional VP (company executive) will certify they he/she has examined the OSHA 300 log and when found to be correct will sign the OSHA 300A summary on an annual basis as required by OSHA. A copy of the summary will be posted from February 1st through April 30th in the establishment in a conspicuous place where

employees notices are customarily posted. Airswift will ensure that the poster is not altered or defaced or covered by other material.

Incident Investigations must be documented. Participants shall prepare a written report including the description of the incident, any evidence collected during the investigation, an explanation of the causes of the incident and corrective actions.

Detailed written records must be kept of work-related fatalities, injuries, and illnesses.

Recordkeeping of the forms must be maintained for a minimum of 5 years.

A near miss is an unplanned event that did not result in injury, illness, or damage, or release of product - but had the potential to do so. Only a fortunate break in the chain of events prevented an injury, fatality or loss/damage. Although human error is commonly an initiating event, a faulty process or system invariably permits or compounds the harm, and is the focus of improvement.

Through the analysis of near misses, related processes and systems may be modified to reduce the likelihood/probability of a serious incident.

Near miss reporting requires good judgment of employees. It is impossible to clearly define all potential near misses, but most employees know when they have witnessed a near miss.

Our goal is to capture near misses for analysis so we can modify the designs, processes and systems to avoid near misses. Employees should have an extreme sensitivity to near misses so we can keep our workplaces safe.

In accordance with Section 11(c) of the OSH Act, Airswift does not discriminate against an employee who reports a workplace injury.

4.0 RESPONSIBILITIES

Managers/supervisors are responsible for ensuring that all of their employees understand the procedures for reporting incidents. Managers are also responsible for investigating all reportable (vehicle), recordable (OSHA) incidents and spill/release accidents. Individual responsibilities for investigating must be pre-determined and assigned prior to incidents.

Training:

Members of the incident investigation team shall be qualified/competent individuals. Airswift shall provide training on investigation techniques used during an incident investigation. Personnel will be trained in their roles and responsibilities for incident response and incident investigation techniques.

Management

- Conduct accident prevention and investigation training for supervisors
- Ensure all accidents and injuries are properly investigated

- Ensure immediate and long-term corrective actions are taken to prevent reoccurrence
- Maintain Accident Reports permanently on file
- Ensure proper entries are made on the OSHA 300 Log and First Report of Injury
- Provide all necessary medical care for injured workers

Supervisors

- Conduct immediate initial accident investigations
- Report all accidents to management as soon after the event as possible
- Collect and preserve all evidence that may be useful in an investigation
- Conduct interviews of witnesses in a polite professional manner. Do not attempt to find or assign blame for accidents
- Take action to protect people and property from secondary effects of accidents

Employees

- Immediately report all accidents & injuries to their supervisor
- Assist as requested in all accident investigations
- Report all hazardous conditions and near-misses to supervisors

Employees are responsible for the timely reporting of incidents to their supervisor. In the event the employee is unable to contact their supervisor, report the incident to the next person in the chain of command. Employees are also responsible for contributing information relative to the incident during the investigation process. All Airswift personnel will be trained in their roles and responsibilities for incident response and incident investigation techniques by Airswift and/or the Client. Members of the incident investigation team shall be qualified and competent individuals.

Airswift employees receive Incident Awareness during their onboarding process as well as the appropriate contacts to call in case of an emergency. All other incident training is the responsibility of the Client unless otherwise specified.

Hazard Control

Engineering Controls - There are numerous engineered safeguards throughout Airswift and or, the client facility used to protect employees and prevent exposure to hazards. Examples of engineering controls are machine guards, safety controls, isolation of hazardous areas, monitoring devices, etc. Specific engineering controls are addressed in other chapters of the company safety manual and in equipment and process procedures.

Administrative Controls - These controls involve the use of procedures, assessments, inspection, records to monitor and ensure safe practices and environments are maintained. Other administrative controls are in place to identify new hazards and implement corrective action. Examples of administrative controls are periodic inspections, equipment operating and maintenance procedures, hazard analysis, selection, and assignment of personal protective equipment, etc.

Training Controls - This aspect of hazard control is used to ensure employees are fully and adequately trained to safely perform all tasks to which they are assigned. No employee is to attempt any task without proper training in the equipment used, required personal protective equipment, specific hazards and their control and emergency procedures. Examples of training controls are initial new hire safety orientation, job specific safety training and periodic refresher training.

Supervisor Involvement

In most cases, the immediate area supervisor will conduct the initial phase of an accident investigation. This initial activity is primarily a recording of facts involved in the accident, list of affected employees and witnesses. Direct supervisors are familiar with employee's work environment & assigned tasks. Supervisors must take the accident situation under control and immediately eliminate or control hazards to others.

*Employees who could be first responders should be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.

In the event of an incident, 911 should be contacted immediately if it is an emergency requiring more than first aid. If the treatment is beyond first aid, but not an emergency then all employees are instructed/trained to call Axiom. Axiom is Airswift's 3rd party case management company where trained nurses will walk the injured person through the details of the incident and assign the correct level of care, whether that be first aid, an occupational health clinic etc. Then report to line manager, Airswift point of contact, Airswift and/or Client safety department, and other organizations should be contacted as required. The employer of the worksite where the incident occurs must verbally report required incidents to OSHA within 8 hours of their discovery. Incidents must also be reported to Airswift and the host/client site within 24 hours of incident when the incident occurs.

Immediate Steps

1. Provide First Aid for any injured persons.
2. Eliminate or control hazards.
3. Document accident scene information to determine the cause.
4. Interview witnesses immediately.

Accident Prevention

Accidents are usually complex. An accident may have 10 or more events that can be causes. A detailed analysis of an accident will normally reveal three cause levels: basic, indirect, and direct. At the lowest level, an accident results only when a person or object receives an amount of energy or hazardous material that cannot be absorbed safely. This energy or hazardous material is the DIRECT CAUSE of the accident. The direct cause is usually the result of one or more unsafe acts or unsafe conditions, or both. Unsafe acts and conditions are the INDIRECT CAUSES or symptoms. In turn, indirect causes are usually traceable to poor management policies and decisions, or to personal or environmental factors. These are the BASIC

CAUSES. Most accidents are preventable by eliminating one or more causes. Accident investigations determine not only what happened, but also how and why. The information gained from these investigations can prevent recurrence of similar or perhaps more disastrous accidents. Accident investigators are interested in each event as well as in the sequence of events that led to an accident. The accident type is also important to the investigator. The recurrence of accidents of a particular type or those with common causes shows areas needing special accident prevention emphasis.

Initial Investigation Procedures:

Initial identification of evidence might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions. Witness interviews and statements must be collected. Evidence must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment.

The initial investigation has three purposes:

1. Prevent further possible injury and property damage
2. Collect facts about the accident
3. Collect, preserve and secure evidence

When an incident occurs on the Client's site equipment needed to initiate the investigation such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, and etc., shall be provided by the Client. All evidence collected must be preserved and secured.

Steps

1. Secure the area. Do not disturb the scene unless a hazard exists.
2. Prepare the necessary sketches and photographs. Label each carefully and keep accurate records.
3. Interview each victim and witness, as well as those who were present before the accident and those who arrived at the site shortly after the accident. Keep accurate records of each interview. Use a tape recorder if desired and if approved.

Determine

1. Injured person's name, injury description
2. What was not normal before the accident. The nature of the incident
3. Where the abnormality occurred.
4. When it was first noted.

5. How it first occurred.
6. Human or other contributing factors leading to the incident.

Follow-up Accident Investigation

The follow-up investigation is used to analyze data and determine the causes and corrective actions necessary to prevent reoccurrence.

Steps:

1. Analyze the data obtained in the initial investigation.
2. Repeat any of the prior steps, if necessary.

Determine:

1. Why the accident occurred.
2. A likely sequence of events and probable causes (direct, indirect, basic).
3. Determine the most likely causes.
4. Conduct a post-investigation briefing.
5. Prepare a summary report, including the recommended actions to prevent a recurrence. Recommended changes identified as a result of the investigation.

An investigation is not complete until all data is analyzed, and a final report is completed. In practice, the investigative work, data analysis, and report preparation proceed simultaneously over much of the time spent on the investigation.

Conducting Interviews

In general, experienced personnel should conduct interviews. All interviews should be conducted in a quiet and private location. It is essential to get preliminary statements as soon as possible from all witnesses. Investigators should not provide any facts to the witness - only ask non-leading questions.

1. Explain the purpose of the investigation (accident prevention) and put each witness at ease.
2. Listen, let each witness speak freely, and be professional, courteous and considerate.
3. Take notes without distracting the witness. Use a tape recorder only with consent of the witness.
4. Use sketches and diagrams to help the witness.
5. Emphasize areas of direct observation. Label hearsay accordingly.
6. Do not argue with the witness.
7. Record the exact words used by the witness to describe each observation.
8. Identify each witness (name, address, occupation, years of experience, etc.).

Accident Analysis

Accidents represent problems that must be solved through investigations. Formal procedures are helpful in identifying and solving problems. This section discusses two of the most common procedures: Change Analysis and Job Safety Analysis.

Change Analysis

As its name implies, this technique emphasizes change. To solve a problem, an investigator must look for deviations from the norm. Consider all problems to result from some unanticipated change. Make an analysis of the change to determine its causes. Use the following steps in this method:

1. Define the problem (What happened?).
2. Establish the norm (What should have happened?).
3. Identify, locate, and describe the change (What, where, when, to what extent).
4. Specify what was and what was not affected.
5. Identify the distinctive features of the change.
6. List the possible causes.
7. Select the most likely causes.

Job Safety Analysis

Job safety analysis (JSA) is part of many existing accident prevention programs. In general, JSA breaks a job into basic steps, and identifies the hazards associated with each step. The JSA also prescribes controls for each hazard. A JSA is a chart listing these steps,

hazards, and controls. Review the JSA during the investigation if a JSA has been conducted for the job involved in an accident. Perform a JSA if one is not available. Perform a JSA as a part of the investigation to determine the events and conditions that led to the accident.

Investigation Report

An accident investigation is not complete until a report is prepared and submitted to management. To be an effective tool, an accident report should be clear and concise. The purpose of the investigation is to prevent future accidents. The following outline has been found especially useful in developing the information to be included in the formal report:

1. **Background** Information
    a. Where and when the accident occurred
    b. Who and what were involved?
    c. Operating personnel and other witnesses
2. **Account** of the Accident (What happened?)

a. Sequence of events
b. Extent of damage
c. Accident type
d. Agency or source (of energy or hazardous material)

3. **Discussion** (Analysis of the Accident - HOW; WHY)
   a. Direct causes (energy sources; hazardous materials)
   b. Indirect causes (unsafe acts and conditions)
   c. Basic causes (management policies; personal or environmental factors)
4. **Recommendations** (to prevent a recurrence) for immediate and long-range action to remedy:
   a. Basic causes
   b. Indirect causes
   c. Direct causes (such as reduced quantities or protective equipment or structures)

Possible Causes

Obvious accident causes are most probably symptoms of a "root cause" problem. Some examples of Unsafe Acts and Unsafe Conditions which may lead to accidents are:

Unsafe Acts

- Unauthorized operation of equipment
- Running - Horse Play
- Not following procedures By-passing safety devices
- Not using protective equipment
- Under influence of drugs or alcohol

Unsafe Conditions

- Ergonomic Hazards
- Environmental Hazards
- Inadequate housekeeping
- Blocked walkways
- Improper or damaged PPE
- Inadequate machine guarding

5.0 RECOMMENDATIONS

As a result of the findings is there a need to make changes to:

Employee training

Work Station design, Policies or procedures

Records

All accident reports will be maintained on file permanently. They shall receive timely review by upper management to ensure proper corrective actions have been taken. First Report of Injury and OSHA 300 Log entries will be made within 8 hours of notification of injuries or illnesses.

THE ROOT CAUSE(S) OF THE ACCIDENT

Identifying root causes to accidents is one of the central ideas behind accident investigation and getting to the contributing factors of the accident is what identifying the root cause(s) is all about. Before looking for root causes to accidents, it's important that you understand the difference between a symptom and a root cause.

A symptom is a contributing factor to an accident where as, a root cause is the likely cause of the accident itself.

- A symptom/direct cause is the condition, event or action which directly resulted in the occurrence.
- A contributing cause is a cause associated with the occurrence, but which, by itself, would not have caused the occurrence.
- The root cause is a fundamental cause, which, if identified, would permit root action to be taken, thus correcting and preventing a similar type of occurrence.

The tendency of accident investigation has been to focus on the immediate actions and conditions of the accident. While it is important to evaluate immediate actions and conditions, doing so will often lead to an emphasis on the individuals involved, which then tends to focus blame. Remember, the overall tone of any accident investigation should be that health and safety matters to this organization.

Root Cause Analysis is a consistent and repeatable process for analyzing incidents with a non-punitive objective. However, Root Cause Analysis is not a means to eliminate all hazards or to search for "the guilty". Neither does it intend to be a replacement for thinking of and caring for employees nor does it intend to replace accident investigation or reporting.

Root Cause Analysis is a thinking tool that can be used to analyze failures in processes. Root Cause Analysis is a methodology that systematically probes a problem to determine the basic (root) underlying cause of the failure.

Root Cause Analysis is to be completed for the following:

- All OSHA Recordable accidents
- All LTA's

- All incidents which could have resulted in serious injury, property damage, environmental damage or public disruption
- Groups of recurring theme accidents (i.e. falls, eye injuries, hand tool usage, etc.)
- Major potential problems (i.e. falls, electrocution, etc.)

1. EXAMINE EACH POTENTIAL CAUSE

Once all of the possible causes have been identified, each one should be examined until a root cause is identified. At this point, it is important not to focus on one particular suspected cause, because all factors that led up to the accident need to be examined and eventually corrected. While all incidents will be investigated the extent of the investigation will be appropriate to the level of incident severity.

The examination process is actually a series of questions, because identifying the root causes to accidents will usually center around the question "why," or "why not." By asking a series of "why" and "why not" questions, you should be one step closer to determining the root cause(s) of the accident. These questions might also help you determine the reasons for certain employee actions that led up to the accident.

2. EXAMINE THE REASONS FOR EMPLOYEE ACTIONS

When looking for root causes to an accident, determine why an employee acted the way they did prior to the accident. Or look at the specific conditions of the task just prior to the accident.

Some questions you may want to consider include:

5.1.1 Was there something unusual or different about the job or task on the day of the accident?
5.1.2 Was there a production push at the time the accident occurred?
5.1.3 Was there a communications breakdown between employees or supervisors?
5.1.4 Was the employee properly trained?
5.1.5 Was personal protective equipment available?
5.1.6 Was the employee in a hurry?
5.1.7 Was the employee fatigued?
5.1.8 Was there a lack of teamwork?
5.1.9 Was the employee taking shortcuts to complete their task?
5.1.10 Were there procedures that were inaccurate?
5.1.11 Was the accident due to any external factor(s)?
5.1.12 Were tools being incorrectly used?

Identify the failures at a deep level in order to prevent, not only a reoccurrence of the accident, but all of the potential accidents stemming from the same root cause.

DETERMINE A ROOT CAUSE:

Deciding on a root cause is ultimately what the accident investigation process is all about. There may be several causes of the accident, and not just one.

Root Cause Analysis involves:

1. Looking at the overall effect that the accident had on people, property, products, and processes at your facility;
2. Examining all potential causes of the accident; and
3. Determining the reasons behind the employee actions that led up to the accident.

Utilize these three steps to determine a root cause or root causes of the accident. Next, use this information to develop the corrective and preventive actions that will help prevent future accidents.

DEVELOP CORRECTIVE AND PREVENTIVE ACTIONS

The written incident investigation report shall include any immediate corrective actions that were taken as well as any long-term actions that are required to prevent the recurrence of the incident.

Develop a list of corrective and preventive actions that will prevent future accidents. Corrective and preventive actions that should be recommended to upper management should be determined by:

1. Evaluation of the root cause(s) of the accident
2. How to reduce or eliminate root causes from all workplace activities.
3. Retain incident investigation findings for future hazard analysis or two years; whichever is greater
4. Determine and document responses to findings to ensure corrective action plans are completed
5. Implement a system to distribute incident investigation findings to appropriate personnel and/or similar facilities throughout the organization

Now that the root causes(s) of the accident have been determined, corrective and preventive actions must be put in place that will eliminate, or at least reduce, the chances of another accident occurring at the facility.

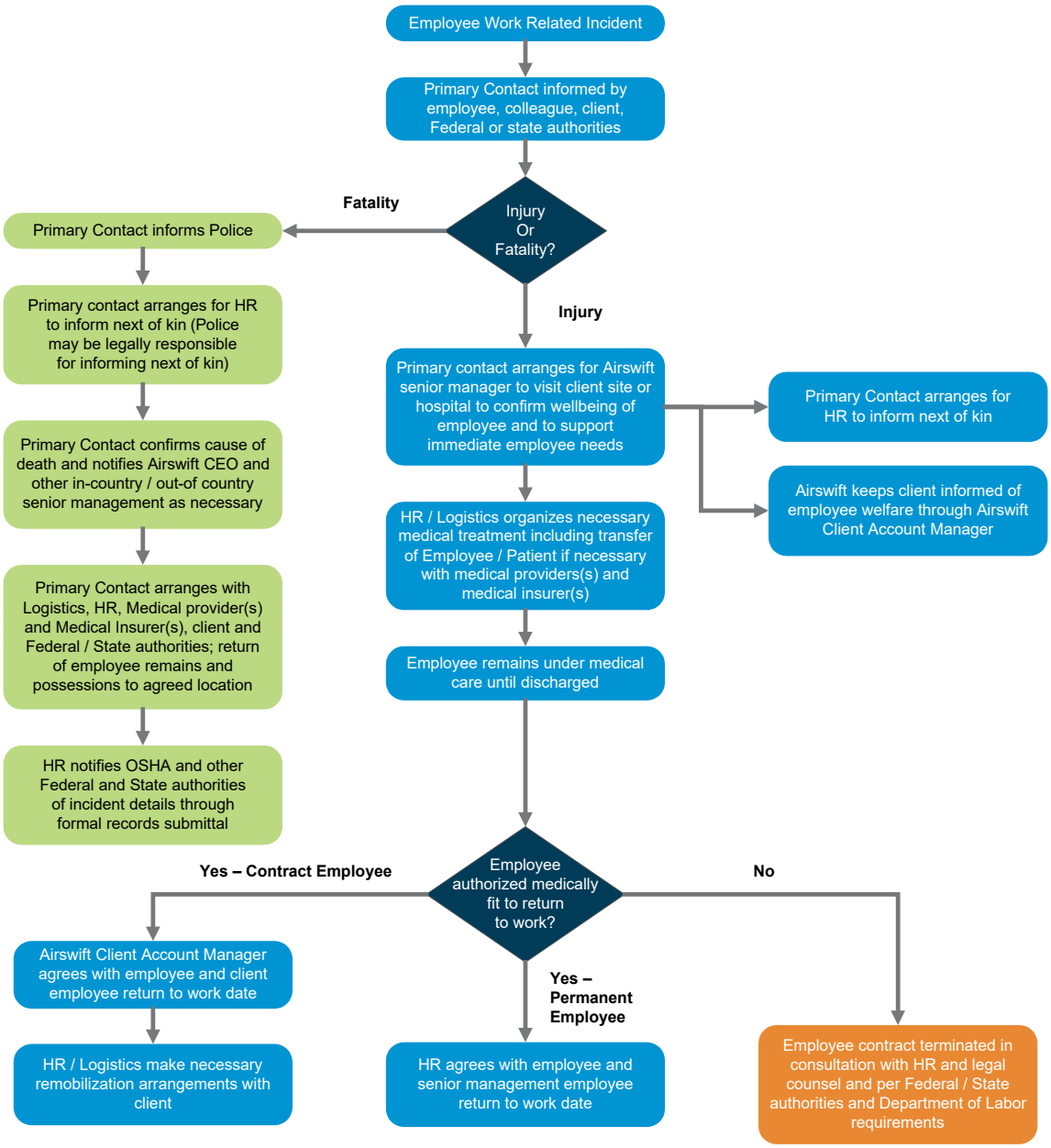
Re-examine the list of determined root causes of the accident. After the root cause(s) have been determined, recommendations for corrective and preventive actions are to follow. Developing an effective set of corrective and preventive actions starts with an evaluation of the identified root cause(s).

CLOSING THE INCIDENT INVESTIGATION

After the root cause(s) of the accident have been identified, evaluate it/them to determine how the cause can be prevented from occurring in the future. With the help of other supervisors, managers, and employees, discuss quantitative ways to remove the root cause(s) from the system. Also follow up on corrective actions to see they were implemented/completed, and lessons learned should be reviewed and communicated.

Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

Airswift Emergency Response Process



GENERAL REQUIREMENTS IN EMERGENCY RESPONSE:

- Record brief incident details as early as possible as a permanent record of what occurred.
- Employees contributing to the incident response are to record their actions and retain all documents as a permanent record of what was done.
- If the employee is a foreign national in the US whether they are resident working in the US or are only visiting on a business trip; then the employees nearest representative embassy or consulate may also need to be notified to assist in liaison with US Federal authorities and in repatriation.
- Within 8 hours after the occurrence of an employment accident which is fatal to one or more employees or which results in hospitalization of three or more employees; Airswift shall report the accident to the nearest office of the Area Director of the Occupational Safety and Health Administration, U.S. Department of Labor.
- Only a certified physician or coroner can confirm death has occurred. Until this verification is formally received then no notification of death will be communicated publically outside of the organization. All communications will refer to an 'Injured Employee'. Only if death is formally verified will communications refer to a 'Fatally Injured Employee'.
- In the event of death or serious injury of an employee; formal communications will be issued from the Vice President - U.S. Operations only or a senior manager authorized by the Vice President - U.S. Operations to make such communications.

Immediate concerns after the incident are:

1) Ensure any injured person receives proper care;

2) Vice President - U.S. Operations or nominated senior manager to decide if any immediate work stoppage is required to temporarily prevent immediate co-workers and other Airswift employees working with similar equipment or in similar job roles being exposed to the same hazard until the investigation is complete and causes are fully understood.

3) Vice President - U.S. Operations or nominated senior management representative to communicate the incident to all Federal and State authorities including police, OSHA, department of Labor etc.;

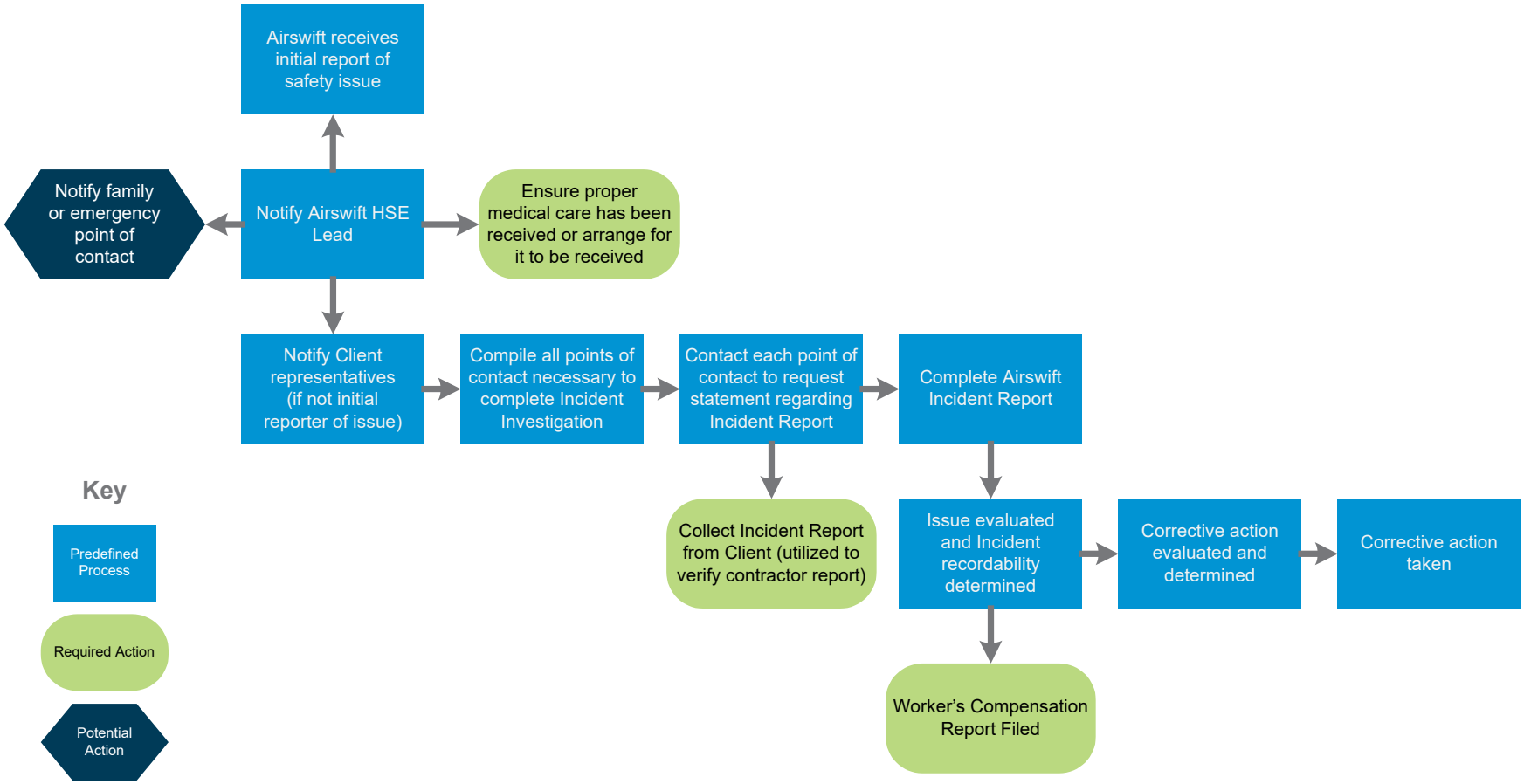
   Note: Within 8 hours after the occurrence of an employment accident which is fatal to one or more employees or which results in hospitalization of three or more employees, Airswift shall report the accident either orally or in writing to the nearest office of the Vice President - U.S. Operations of the Occupational Safety and Health Administration, U.S. Department of Labor. The report shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries

4) Vice President - U.S. Operations or nominated senior management representative to communicate the incident to all employees as necessary. Communication to be approved by the Vice President - U.S. Operations and avoid speculation and be factual only;

5) Vice President - U.S. Operations or nominated senior manager to communicate the incident to any media sources as necessary depending on the scale of the incident to Airswift employees, property or reputation. Communication to be approved by the Vice President - U.S. Operations and avoid speculation and be factual only; and

6) Start the investigation promptly.

Airswift Incident Reporting Process



Appendix A

Supervisor's Accident Investigation Form

Supervisor's Accident Investigation

Instructions: Supervisors must use this form to report all work related injuries, illnesses, or "near miss" events (which could have caused an injury or illness) – no matter how minor. ***This form shall be completed by Supervisors within 72 hours of the incident.***

Supervisor's Accident Investigation Form

Name of Injured Person: _____
Date of Birth: _____ Telephone Number: _____
Address: _____
City: _____ State: _____ Zip: _____

(Circle one) Male Female

What part of the body was injured? Describe in detail. _____
_____

What was the nature of the injury? Describe in detail. _____
_____

Describe fully how the accident happened? What was the employee doing prior to the event? What equipment, tools being using?_____
_____

Names of all witnesses: _____
_____

Date of Event _____Time of Event _____

Exact location of event:_____

_____

What caused the event? _____

_____

Were safety regulations in place and used? If not, what was wrong? _____
_____
_____

Employee went to doctor/hospital? Doctor's Name: _____
Hospital Name: _____

Recommended preventive action to take in the future to prevent reoccurrence: _____

_____

Appendix B

Incident Investigation Report

Incident
Investigation Report

Employee Information

Name:

Telephone Number:

Email Address:

Male:___ Female: ___

Client:

Investigation conducted by:

Incident Information

Date reported to Airswift:

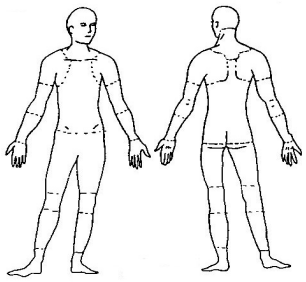
Date of Event:

Time of Event:

Date shift began: Time shift began:

Exact location of event:

What part of the body was injured?



Nature of injury:

- ☐ Abrasion, scrapes
- ☐ Amputation
- ☐ Broken bone
- ☐ Bruise
- ☐ Burn (heat)
- ☐ Burn (chemical)
- ☐ Concussion (to the head)
- ☐ Crushing Injury
- ☐ Cut, laceration, puncture
- ☐ Hernia
- ☐ Illness
- ☐ Sprain, strain
- ☐ Damage to a body system
- ☐ Other _____

Describe *fully* how the accident happened. What was the employee doing prior to the event?

What caused the event?

What equipment/tools were being used?

Names of *all* witnesses:

Did employee receive medical attention?

Did you miss any time away from work while seeking medical attention?

What safety regulations were in place and used? If not, what was wrong?

Was this a Client/Airswift recordable?

What type of corrective action has been implemented?

Appendix C

Identifying Root Causes Form

Identifying Root Causes

Identifying the root cause of an incident is one of the most important aspects of incident investigation. The **root cause** of an incident is the primary event without which the incident would not have happened. Another way to think of a root cause is: If the root cause had been prevented, the incident would not have happened. It is not always possible to identify *the* root cause of an incident, but we can usually get very close by analyzing the **contributing** or **causal factors**.

Whether an incident is due to operations or maintenance problems, technical problems, industrial hygiene concerns, reliability concerns, natural phenomenon or sabotage, there are many ways to analyze the causes and categorize the **root causes**. Listed below are some root cause categories commonly used:

- *Equipment* - Was a hazardous condition a contributing factor? Examples of hazardous conditions include: missing or defective equipment/parts, equipment/parts not inspected or deficiencies not reported properly, incorrect or improperly designed materials, tools, or equipment used, etc.

- *Communications* - Were communications given in an understandable manner? In a timely manner? Fully understood by the receiver?

- *Environment/Ergonomic* - Was the location or position of equipment, materials, or employees a contributing factor? Examples include: illumination, noise levels, air contaminants, temperature extremes, ventilation, vibration, radiation, weather, location/position/layout of equipment, position of employee, barriers/ warning lights and signs, etc.

- *Job Oversight & Supervision* - Were the job and the workers selected, prepared and supervised properly?

- *Management System* - Was a management system defect a contributing factor? Examples include: failure to detect, anticipate or report hazardous conditions, lack of or inadequate standards or policies, lack of auditing or communications with employees, etc.

- *Procedures* - Were written, up-to-date job procedures in place and used properly? Examples include: missing or inadequate written procedures, sequence wrong, etc.

- *Training* -Was adequate training conducted and fully understood by employees?

The incident investigation team first determines the sequence of events in the incident. Then the team identifies the potential causes and the root cause, if possible. Lastly, the team makes recommendations to prevent reoccurrence and documents their results. The questions on the next few pages are designed to help the team systematically analyze the incident and identify the root cause.

Identifying Root Cause

"No" answers should be considered as causal factors and a potential root cause(s).

	Yes	No	NA
Part 1 - Equipment			
1. The equipment used was functioning properly? (If yes, go on to Part 2)			
2. Was equipment maintained in a safe and operable condition?			
3. Was there a written maintenance schedule for the equipment?			
4. Was the maintenance schedule followed?			
5. Was this a repeat failure of the equipment? (If yes, go to Management Systems)			
6. Was the equipment designed and reviewed according to written procedures?			
7. Did the specifications address the means by which the equipment failed?			
8. Was the equipment or parts defective? (If yes, determine if the root cause exists in how the equipment was obtained, manufactured, handled, stored, or tested prior to use.)			
9. Was this an expected failure?			
Part 2 – Communications			
1. Were communications adequate?			
2. Were communications timely?			
3. Were communications clear, fully understood by recipient, the right length, not confusing, communicated in area/location where they could be fully understood?			
Part 3 - Environmental/Ergonomic			
1. Were environmental or ergonomic factors adequate? (If yes, continue to Part 4)			
2. Were the following conditions adequate: labeling, the arrangement or placement of the machine and employee, instruments, displays, warning lights, the awareness of the operator, duplicate machines/equipment the same?			
3. Was housekeeping good, the work environment a comfortable temperature, good lighting, acceptable noise level, not cramped/crowded, no other contaminants or health hazards?			

	Yes	No	NA
4. If the operating system is complex did the operator possess the knowledge he or she needed to operate safely and was the operator monitoring no more than 3 critical functions at once?			
5. In the operating system were errors detectable by the operator and could he or she adequately recover from errors?			
Part 4 - Job Oversight and Supervision			
1. Were job oversight and supervision adequate? (If yes, continue to Part 5)			
2. Was there a good, understandable work package? Adequate job preparation? Pre-job briefing and walk-through? Lockout performed? Job scheduled appropriately?			
3. Was the worker qualified to perform the task?			
4. Was the worker in good physical and mental condition to perform the task? (Not tired, upset, under the influence of drugs or alcohol)			
5. Was there adequate supervision during the work?			
Part 5 - Management System			
1. Were management systems (standards, policies, work rules, audits and evaluations, corrective actions taken as necessary) adequate? (If yes, continue to Part 6)			
2. Were written standards available in the work place? Fully communicated to employees? Clear and complete? Technically accurate? Enforced uniformly?			
3. Were audits and evaluations conducted per specified frequencies?			
4. Were audits and evaluations detailed enough to detect deficiencies and conducted by an objective person?			
5. If corrective action had already been specified but not yet implemented, were the reasons/time frames for delay reasonable?			

		Yes	No	NA
Part 6 – Procedures				
1.	Were written procedures present and followed correctly? (If yes, continue to Part 7)			
2.	Was the procedure available and convenient to use?			
3.	Was the procedure followed correctly?			
4.	Was the format clear? Less than one action per step? Graphics clear? Computations/specifications clear? Checklist clear? Equipment identification clear?			
5.	Was the procedure free of typographical errors? Facts correct? All potential situations covered? The correct version of procedure used?			
Part 7 – Training				
1.	Was training and employee understanding of training adequate? (If yes, go back and identify the root cause and corrective actions for each? no? answer.)			
2.	If there had been a decision not to conduct training, had the task been analyzed?			
3.	Did the lesson plan address the situation, which led to the incident?			
4.	Was there adequate practice and testing to ensure the employee understood the training?			
5.	Was there adequate continuing education to ensure the employee continued to be able to do the job safely?			

Appendix D

Corrective Action Plan

Corrective Action Plan

Name:		**Incident Date:**	
Client:		**Location:**	
Account Manager:		**Safety Rep (HSR):**	

Notes:

- Corrective Action Plan should be submitted to the relevant Faculty/Institute/Division, and remain on agenda until all matters are resolved.

Incident	
Identified Hazards / OHS System Deficiencies	
Proposed Corrective Action(s)	
Person Responsible for follow-up	
Status	
Completion Date	
Notes/Comments	

Appendix E

Airswift Incident Flowchart to be placed at Client Site

INCIDENT PROCEDURE
Client Name – Location

Injury Incident Requiring Medical Attention

AXIOM Nurse Case Managers will work with the Client's Onsite Clinic for medical assistance beyond first aid or refer the injured Contractor to a Third-Party Occupational Medical Clinic for treatment and post-accident drug screenings. AXIOM will send email notification to: usincidents@airswift.com

Safety Group will: Notify your Service Advisor and Account Manager,

Non-Injury and Near Miss Incidents

Contact your immediate Client Supervisor and Airswift Service Advisor

Service Advisor will ensure an Incident Report is completed and sent to Safety Group; complete a Drug and Alcohol Screen if required by Client

Service Advisor will: Complete Post Incident Drug and Alcohol Screen for all (injuries, auto accidents, and property damage), ensure injured Contractor has completed and submitted copy of the Incident Report

Safety Group will: Conduct a full investigation, assign Corrective Actions to be reported to Client Representative

Service Advisor and Safety Group will: Ensure Corrective Action requirements are completed prior to releasing Injured Contractor

Safety Group and Account Manager will: Review Corrective Actions with Client Representative and Close the report