All-Weather Plan

Scope

This document applies to outdoor work on all flightlines where the 737 Program employees operate.

Objective

1. Ensure safe and secure, continuous operations during times of inclement weather.
2. Help employees understand the risks during periods of severe weather and the actions they should take to keep themselves safe.

Communication Plan

1. Site Leadership monitors weather status via means available. Possible methods include:
   b. Local, national, and international news/weather agencies via internet, radio, or television.
   c. Host organization or installation, such as Navy, Army, Marine or Air Force base on which Boeing is a tenant organization.
   d. Subscriptions to local airport weather service bulletins.
   e. Smart phone apps for local notifications.

2. Site Leadership communicates weather information and guidance by means available. This communication should include current heat index information, preventive actions to be taken as an employee, other recommendations, and severe weather expectations/watches/warnings. Possible methods of communication include (if applicable to site):
   a. Email, internet, plasmas screens.
   b. Radio, telephone.
   c. DENS, BEACON.
   d. Host organization or installation, such as “Giant Voice” or loudspeakers, radio transmissions, call-in telephone numbers, and word-of-mouth, such as through production meetings, maintenance control centers, flight line dispatchers or expediters.
   e. Weather notification system, such as a warning lighting system.

3. Site Leadership will determine actions to be taken by their personnel in response to weather conditions and communicate by means available and suitable, such as those mentioned above. This could include activating the Site Emergency Operations Center (EOC) (if applicable to location).
4. Follow the recommended action(s) and/or response of host organization or installation, such as Navy, Army, Marine or Air Force base on which Boeing is a tenant organization.
Heat Related Illness (see RC-090G for requirements)

Responsibilities, Accountability, Authority

A. Management:
   1. Maintain current emergency contact information for site.
   2. Monitor weather conditions and forecasts for information on excessive heat warnings, watches or advisories.
   3. Communicate Hot Weather watches and warnings from customer or local weather authorities to employees.

B. Environment, Health & Safety (EHS):
   1. Provide periodic Safety Bulletins or other communications to impacted employees for hot weather situational awareness. Work with Site Leadership to identify and address unsafe hot weather conditions and behaviors and to recognize positive employee actions to prevent heat-related injuries.

Heat Index Action Levels

Specific actions during a period of hot weather will vary based on local conditions, timing of the weather event, and other local aspects.

The following are general actions to mitigate the potential for injury from heat related illness. Mandatory Supervisor or designee actions for heat index ranges are listed below. Note that heat index charts were developed for shady, light wind conditions, and exposure to full sunshine can increase heat index values by up to 15°F.

Heat Index 91 to 103°F (Risk Level: Moderate)
   1. Review heat-related illness topics with team: how to recognize heat-related illness, how to prevent it, and what to do if someone gets sick.
   2. Remind team to drink water often (about 4 cups/hour).
   3. Schedule frequent breaks in a cool, shaded area. Recommended break ratio is 45 minutes work to 15 minutes rest and recovery.
   4. Establish a buddy system and instruct teammates to monitor each other for signs of heat-related illness.

Heat Index 103 to 115°F (Risk Level: High)
   1. Communicate with and monitor personnel for signs of heat related illness at all times.
   2. When possible, reschedule activities to a time when heat index is lower.
   3. Alert teammates of high risk condition.
   4. Actively encourage team to drink plenty of water (about 4 cups per hour).
   5. Limit physical exertion.
   6. Enforce work/rest schedules at a ratio of 30 minutes work to 30 minutes rest in cool, shaded area.
   7. Adjust work activities by rescheduling work, pacing and/or rotating jobs.
   8. Use cooling techniques (e.g. refrigerated cooling vests or wet terry cloth towels/over-garments).

Heat Index >115°F (Risk Level: Very High to Extreme)
   1. Strenuous work tasks should not be conducted.
2. Reschedule non-essential activity to a time or day with reduced heat.
3. Move essential work tasks to the coolest part of the work shift; consider earlier start times, split shifts, or evening and night shifts.
4. If essential work must be done, the following actions must occur in addition to above:
   a) Alert team of extreme heat hazard.
   b) Establish water drinking schedule (about 1/4 liter/hour).
   c) Enforce work/rest schedules at a ratio of 15 minutes work to 45 minutes rest in cool, shaded area.
   d) Stop work if essential control methods are inadequate or unavailable.

Heat Index Temperature > 130°F (inside or outside)

1. All physical activity will cease in this area.

Exceptions to this requirement may only be approved by the Senior Site Executive or their delegate, and all other measures noted under Heat Index greater than 115°F area must be in place (i.e. 15 minutes work to 45 minutes rest). Approval should be for limited duration and should be documented with specific parameters noted (i.e., date and length of time).

Employees Working in Hot Conditions

1. Take Course TR012276 “Heat and Sun Related Illness”. (Note: Optional unless required by state or local regulations)
2. Wear light-colored, light-weight, loose-fitting, breathable clothing made from wicking fibers such as cotton. Long sleeves and pants are recommended.
3. Avoid working in direct sunlight if possible.
4. Wear a wide-brimmed hat whenever possible.
5. Apply sunscreen to exposed skin.
6. Immediately report any signs or symptoms of heat related illness to your supervisor and/or Health Services.

Supervisors of Employees Working in Hot Conditions

1. Ensure all affected employees take training course TR012276 “Heat and Sun Related Illness”. (Note: Optional unless required by state or local regulations)
2. Acclimatize workers by gradually introducing new or returning personnel to working in the hot environment.
   a. New workers should perform no more than 20% of the usual duration of work in the heat of the day initially
3. Consider the forecasted Heat Index when scheduling work activities.
4. Closely monitor ground personnel exposed to severe heat. Take into consideration exposure time versus performance.
5. Consideration will be made of employees with certain types of health problems, e.g., hypertension, taking medication sensitive to sunlight or excessive heat, etc.
6. Provide portable shade structures or relocate work to shaded locations when feasible.
7. Provide ready access to cool, potable drinking water, cool bottled drinking water, portable water coolers, or personal hydration packs.
8. Consider providing PPE (cooling vests, neck gaiters, sun hats, sun screen, etc.)
9. Provide fans to aid with air movement when work must be conducted in poorly ventilated locations. Provide portable evaporative coolers or air conditioners to reduce heat stress, if available.
10. Warn employees to be aware of hot metal surfaces.
11. Encourage employees to use cool-down stations or locations to help lower their core body temperature.
12. Consider providing electrolyte drinks, drink mix or snacks.

Heat-related Illnesses and Symptoms

The following summarizes the five types of heat related illnesses and their symptoms:
1. Heat Cramps – Muscle spasms or pain in arm, leg and/or stomach muscles.
3. Heat Exhaustion -- Blurred vision, nausea, fatigue, headache, profuse sweating, unexpected clumsiness.
4. Heat Rash – Red clusters of small blisters or pimples, usually appears on the neck, upper chest, groin or elbow creases.

For additional information on heat related illnesses see Boeing Guide-RC-090G, Guide for Working in a Hot Environment.

Emergency Response for Heat Stress Illness

The following steps should be followed when treating a person who is exhibiting symptoms of Heat Stroke:
1. Call Site Emergency Dispatch Number (see Emergency Information and Reporting webpage) or 911, stay with person until emergency medical services arrive
2. If possible, move individual to a shaded area or indoor in a cooled environment and remove outer clothing
3. If person is capable, provide and encourage them to drink cool water (preferred) or other non-cafffeinated beverage
4. Lay individual down, if possible slightly elevate legs and feet
5. Cool the individual immediately by utilizing cold water or ice. Wet the skin, place cold cloths directly on skin or soak clothing with cool water
6. Circulate the air around the person to speed cooling
7. Place cold cloths or ice on head, neck or armpits
Table 1. Heat Index Calculation (ref: https://www.weather.gov/jetstream/hi)

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Relative Humidity (%)</th>
<th>Heat Index (°F)</th>
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</thead>
<tbody>
<tr>
<td>40</td>
<td>10</td>
<td>82</td>
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<tr>
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<tr>
<td>70</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: solar radiation (direct sun) can increase the HI up to 15 degrees.
Wind and Lightning (see BPI-5677 for requirements)

Responsibilities, Accountability, Authority

A. Security and Fire Protection
   1. Issue severe weather notification using site notification process

B. Operations Personnel and Managers, Transportation, F&AM
   1. Secure or move aircraft, equipment, and tools at the direction of 737 Operations in accordance with Severe Weather Action Plan

C. Operations Managers
   1. Direct severe weather protection activities
   2. Maintain distribution list for weather notification (if applicable)
   3. Manage contracts with weather service notification services (if applicable)

D. Environment, Health & Safety (EHS):
   1. Perform effectiveness review of site notification process as needed

Wind Action Levels

Wind gusts 29-35 mph
1. Wheel chocks installed on all main landing gear wheels
2. Airplane parking brakes set
3. Position flaps and leading edges as required per aircraft model
4. Airplane should be off jacks if possible (If not, coordinate with Liaison Engineering for tethering plan to minimize potential for product damage)
5. Do not operate mobile manlifts when winds exceed 28 mph (Note: some lifts have been designed for use in winds up to 35 mph, refer to manufacturers manual)
6. Comply with aircraft tech orders, contracts, or manufacturers manuals for severe weather
7. Move all temporary scaffolding away from aircraft and ensure that it is secured
8. Secure tools, materials, and equipment, including garbage cans, tool boxes, ladders, etc., which are not in use and remove all non-essential equipment from vicinity of airplane

Wind gusts 35-50 mph (in addition to all above steps)
9. Lower canopy stands and move away from aircraft
10. Discontinue LOX servicing activities
11. No airplane moves, other than shelter

Wind gusts exceeding 50 mph (in addition to all above steps)
12. Discontinue outdoor fueling activities
13. Secure all windows, doors, panels, and access hatches

Lightning Action Levels

Lightning ADVISORY within 10 miles and approaching flightline
1. Comply with aircraft tech orders, contracts, or manufacturers manuals for severe weather

Lightning WARNING within 5 miles and approaching flightline
2. Discontinue outside fueling activities
3. Discontinue LOX servicing activities
4. Take shelter inside buildings, vehicles or the airplane (during a tow on Boeing property, stop operation and shelter)

**Snow and Ice** (see BPI-5677 for requirements)

**Responsibilities, Accountability, Authority**

A. **F&AM Management**
   1. Develop snow and ice plan that outlines resources, responsibilities and actions.
   2. Activate and deploy resources according to weather forecast.
   3. Bring in additional vendor support based upon individual site conditions.
   4. Specific actions during a period of cold weather will vary based on local conditions, timing of the weather event, and other local aspects.

B. **Executive Leadership**
   1. Annually review and approve snow and ice plan prior to distribution.

C. **Operations Managers**
   1. Maintain current emergency contact information for site.
   2. Disseminate all cold weather related communications and updates to employees (if applicable).
   3. Submit FSR and or call dispatch to report cold weather related hazards needing to be mitigated.

D. **Environment, Health & Safety (EHS):**
   1. Provide periodic Safety Bulletins or other communications to impacted employees for snow and ice situational awareness. Work with Site Leadership to identify and address cold weather related conditions and behaviors.

E. **Snow and Ice Plan**