## CAL Ramp Operations Safety Notes

### Ramp Security & Safety

1. Persons who need to access the aircraft SHALL hold a valid identification badge on the front of the outer garment above the waist.
2. Smoking and the use of open fire on the ramp are strictly forbidden.
3. High visibility colors reflective material SHOULD be worn while access airside.
4. Personnel must not ride up or down on the rear platform of a loader for entering/leaving cabins, holds and compartment.
5. Attempt to jump off or on a moving vehicle/GSE is not allowed.
6. Maintenance, other ground personnel, and equipment MUST be kept clear from the aircraft engines and main landing gears until all engines are shut down and the anti-collision lights turned off.
7. All ramp operation units have the obligation to check their working areas and report any damage before operations.
8. Maintain a full allowance distance between the aircraft and loading/servicing equipment/vehicles to avoid damage caused by vertical movement of the fuselage during loading/unloading/fueling.

| 1. Mobile equipment/vehicles must only be operated by qualified and authorized personnel. |
| 2. Unused equipment/vehicles must be positioned at the designated area. |
| 3. Mobile equipment/vehicles use brake with gear selection park/neutral, foot block and/or chocks while parking on the ramp. |
| 4. Loading/unloading/servicing equipment must not be positioned under the aircraft wings (except fuel truck), must not be allowed to pass through aircraft belly, wings, and between safety cones. |
| 5. Mobile equipment/vehicles shall never move across the path of taxiing aircraft or embarking and disembarking passengers. |
| 6. All high equipment, e.g. tail stand, high working ladder, step-stairs ladder, moving on ramp must maintain a safety distance of at least one meter away from the aircraft. |
| 7. For equipment approaching/leaving to aircraft, MUST NOT exceed walking speed or 5km/hr. |
| 8. It is mandatory to make a full stop and test the brake function at least 5 meters (1 meter for passenger boarding bridge) away from the aircraft before approaching. |
| 9. While driver’s vision is obstructed, a guide person SHALL be designated to instruct approaching/leaving aircraft. The guide person MUST use lighted wands during night hours or bad weather condition. |

### Before arrival of aircraft on ramp

1. All ground equipment SHALL be checked ready at least 5 min. for suitable operation. The check items of mobile equipment SHALL include tire pressure, brake function, oil, fuel, fluid, fire extinguisher, wheel chock/stand, fan belt tension, electric power, and so on.
2. Mobile equipment/vehicles are always to be positioned behind the safety stop line with the parking brake.
FOD (Foreign Object Debris) Inspection

Ground staff SHOULD get to aircraft parking bay at least 5 min. prior to aircraft arrival to perform FOD inspection removing ice, snow, vehicles, steps, cargo equipment, pallets, unauthorized staff, plastic bag, trash, stone, etc. on the aircraft taxiing-in route.

Marshalling

1. Marshaller SHOULD wear a bright uniform/vest and MUST use bats or lighted wands during night hours or bad weather conditions
2. Wing walker SHALL be used when appropriate to guide the aircraft safety from other aircraft, vehicles and fixed objects.

Chocks

1. Positioned the chocks Only WHEN aircraft completely stopped, the engines shut down, anti-collision light turned off, and aircraft parking brake set after in gate.
2. Aircraft parked with nose down slope, four chocks MUST be used on the forward wheels of the main gears with two chocks positioned at the rear of the main gears; Conversely, be used on the rear wheels of the main gears with two chocks positioned at the forward wheels of the main gears.
3. The width of the chocks MUST be sufficient for the aircraft tires, as well as the coefficient of friction and the rigidity SHOULD be suitable.
4. ★ONLY WHEN the tow truck has been connected to aircraft properly, aircraft parking brakes have been set, and all GSE has been disconnected from the aircraft, removed the chocks prior to towing and push-back.

<table>
<thead>
<tr>
<th>Aircraft type</th>
<th>Nose gear (optional)</th>
<th>Main gear</th>
<th>Wing gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>B737</td>
<td>Both ends of left side</td>
<td>Symmetrically in front and rear of the wheels</td>
<td>N.A.</td>
</tr>
<tr>
<td>B747P</td>
<td>Both ends of left side</td>
<td>N.A.</td>
<td>Symmetrically in front of the FWD wheels and behind the AFT wheels</td>
</tr>
<tr>
<td>B747F</td>
<td>Both ends of left side</td>
<td>Symmetrically in front of the FWD wheels and behind the AFT wheels</td>
<td>N.A.</td>
</tr>
<tr>
<td>B777</td>
<td>Both ends of left side</td>
<td>Symmetrically in front of the FWD wheels and behind the AFT wheels</td>
<td>N.A.</td>
</tr>
<tr>
<td>A330</td>
<td>Both ends of left side</td>
<td>Symmetrically in front of the FWD wheels and behind the AFT wheels</td>
<td>N.A.</td>
</tr>
<tr>
<td>A350</td>
<td>Both ends of left side</td>
<td>Symmetrically in front of the FWD wheels and behind the AFT wheels</td>
<td>N.A.</td>
</tr>
</tbody>
</table>
Safety Cones

1. The safety cones are conical in shape with proper weight, minimum height of 750mm, and orange in color with reflective stripping.
2. Safety cones have to be positioned at outboard and both ends of engines and under wing tips as following diagrams; After positioned, it is not allowed to move except authorization.
3. Prior to removing safety cones, ensure all GSE were removed from the path of aircraft push-back and parking area is clear for aircraft push-back.

Arrival (before operations) GDI Inspection

1. When aircraft on positioned, assuring engines shut down and wheels chocked, ground maintenance staff SHOULD do a visual physical aircraft fuselage 360° inspection before servicing for GDI, including the cabin doors area external condition, cargo doors area external condition, potable water/ lavatory service doors/ panel area external condition.
2. After completing the GDI inspection, the ground staff MAY notify service agents to begin ground handling/servicing.

Boarding Bridge (fixed/apron drive type) and Passenger Steps

1. A pretest the functions of moving forward/afterward, auto-leveling and brake MUST be implemented prior to aircraft arrival.
2. The protective bumper on equipment MUST NOT compress to aircraft and MUST keep a safety clearance with cabin door.

<table>
<thead>
<tr>
<th>GSE type</th>
<th>Safety clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment equipped with auto-leveler</td>
<td>Small gap ~ 1 inch (2.5 cm)</td>
</tr>
<tr>
<td>Equipment do not equipped with auto-leveler</td>
<td>1<del>2 inches (2.5</del>5cm)</td>
</tr>
</tbody>
</table>
3. Make sure the boarding bridge DOES NOT contact the wing root leading edge fairing.
4. Maintain adequate clearance between the equipment and the bottom of the cabin door, or as directed by the cabin door marking to prevent damage during loading/unloading.
5. The bridge/steps SHALL be fully retracted at its original position before aircraft move-in and/or after passenger entrance door closed.
### Catering Vehicle

1. The guide person MUST be positioned at all times while approaching to aircraft, which judges the clearances to aircraft and be able to communicate the signals to the driver. Same as vehicle backward, the guide person HAS TO follow up the subject.

2. Maintain adequate distance (50cm or more) in horizontal from the tangent aircraft fuselage to the vehicle. The protective bumper of the flexible platform MUST NOT be compressed to aircraft and maintain adequate distance of 10cm/4-6 inches or more.

3. Maintain adequate clearance between the platform and the bottom of the cabin door.

4. The wheel blocks SHOULD be used when the vehicle is well parked at the working position. A minimum of 4 stabilizers SHALL be provided.

### Cargo Compartment Doors

1. Open/close the electrically operated cargo doors including side cargo door that may only be operated by concerned staff who has been instructed by station engineer.

2. For opening/closing of wide-body aircraft lower deck cargo doors, it is strongly recommended to use the stepladder. If use loading equipment (ex. High loader, conveyor belt loader), its guard rail MUST be retracted firmly and its loading deck MUST be firmly at the lowest position, except for opening/closing of AFT lower deck A330/340 the loading deck is allowed to raise but not exceed 230cm.

3. Before cargo doors opened or closed, loading staff/GHA SHALL perform visual check for damage and report it.

### Upper/Lower Deck Container/Pallet Loader

1. Maintain adequate distance of 10cm/4-6 inches to the cargo hold doorsill.

2. When loading/unloading has been completed, the loader SHALL be backward to the position with enough space for rotation and leaving.

### Conveyor Belt Loader

1. DO NOT drive conveyor belt loader with conveyor belt in the raised position. While conveyor belt loader is on appropriate position under the aircraft and gear selector in park/neutral, raise conveyor belt.

2. The conveyor belt boom is NOT ALLOWED to protrude into bulk compartment.

3. When positioned, SHALL use brake, gear selection in park/neutral, and wheel chocks.
Potable Water/ Lavatory Service

1. Potable water servicers and lavatory servicers MUST NOT be parked in the same area.
2. Personnel engaged in lavatory servicing are NOT allowed to perform potable water service at the same time.

Tug, Trolley carts and Dollies

1. When parked on the ramp, MUST be well secured with brakes set and/or chocks.
2. Loaded transporters and dollies MUST have the load secured from movement by the use of locks, stops, rails or straps at all times.
3. Dolly with empty container on the ramp may cause a potential risk during engine blasting and gusty wind condition, which recommend to be secured by straps.

Departure (after operations) GDI Inspection

Carry out a final aircraft walk around physical check for GDI as well as doors/ panels are closed and secured, including the cabin doors area external condition, cargo doors area external condition, potable water/ lavatory service doors/ panel area external condition, and report any damage.

Aircraft Push Back

1. All GSE/vehicles were removed from the aircraft and passenger boarding bridge/ steps retracted its original position.
2. ONLY WHEN the tow truck has been connected to aircraft properly, aircraft parking brakes have been set, and all GSE has been disconnected from the aircraft, removed the chocks prior to towing and push-back.
3. Prior to removing safety cones, ensure all GSE were removed from the path of aircraft push-back and parking area is clear for aircraft push-back.
4. The parking area clear for aircraft pushback is NOT allowed equipment/vehicles/staff to re-enter ERA.
5. Wing walker SHALL be used when appropriate to guide the aircraft safety from other aircraft, vehicles and fixed objects.

Remark1:

AHM 901// A GSE can be defined as any piece of mobile equipment, whether or not powered or self-propelled, purpose designed, built and used for ground handling, servicing or field maintenance of civil transport aircraft on the ramp area of an aircraft.

Remark2:

GOM6.2.16// 1. Wind velocity 25-40 knots, shall place aircraft chocks in front of and behind the outside main landing gear wheels (744 wing gear) as well as remove the chocks on nose gear; 2. Wind velocity more than 40 knots, the same mentioned above and set the aircraft parking brake. 3. GOM 6.2.18// safety cones setting depends on local airport regulations.

Remark3:

Risk control// When loading/unloading of aircraft, dollies with ULD/Pallet do not pass through in front of aircraft engines.

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