



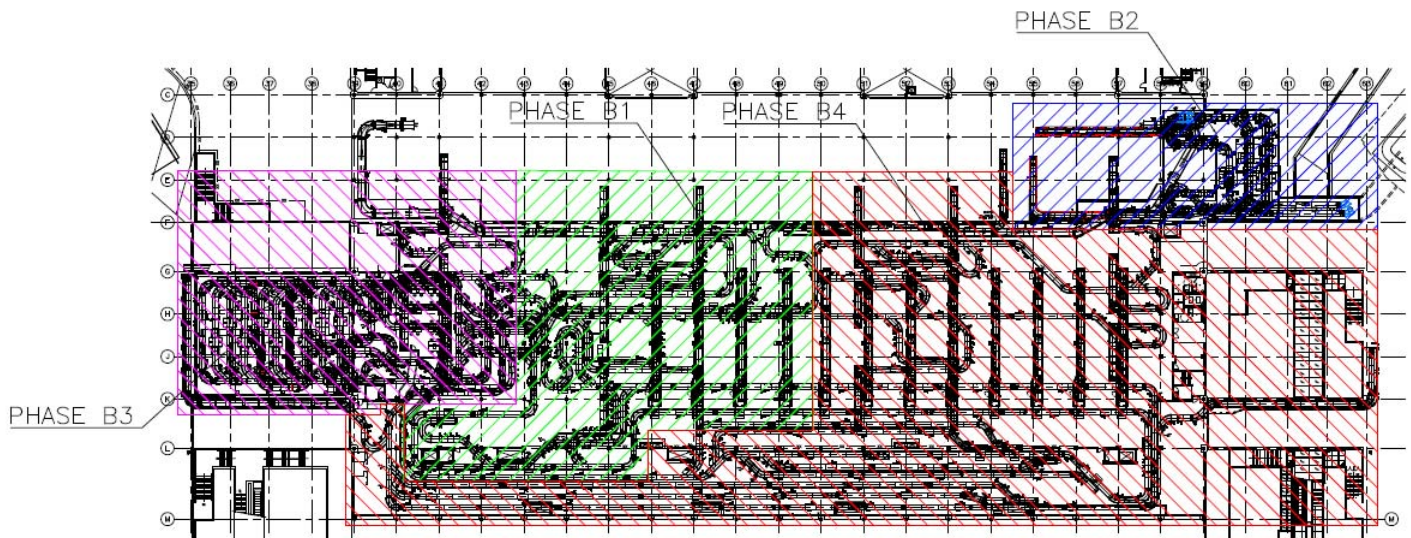
# OPERATIONS AND SAFETY CLASS

## LAX TBIT International Terminal

### Class Agenda

- Introduction and Sign-in 5 min
- Safety Video 30 min
- Basic System layout 5 min
- Basic Bag Tracking 10 min
- Operation of Stop/Start controls 15 min
- Clearing Jams 10 min
- Bag Hygiene and Size Limitations 15 min
- Demonstration of Bag Placement on Belt 15 min
- Tour of Terminal 30 min

**Total 2.5 Hours**





# Baggage Conveyors



 <p>Do Not Climb, Sit, Stand, Walk, Ride, or Touch the Conveyor at Any Time</p>	 <p>Do Not Perform Maintenance on Conveyor Until Electrical, Air, Hydraulic and Gravity Energy Sources Have Been Locked Out or Blocked</p>	 <p>Operate Equipment Only With All Approved Covers and Guards in Place</p>
 <p>Do Not Load a Stopped Conveyor or Overload a Running Conveyor</p>	 <p>Ensure That All Personnel Are Clear of Equipment Before Starting</p>	 <p>Allow Only Authorized Personnel To Operate or Maintain Material Handling Equipment</p>
 <p>Do Not Modify or Misuse Conveyor Controls</p>	 <p>Keep Clothing, Body Parts, and Hair Away from Conveyors</p>	 <p>Remove All Trash, Straps and Other Debris Only When Power is Locked Out</p>
 <p>Ensure That ALL Controls and Pull Cords are Visible and Accessible</p>	 <p>Lock Out All Power Before Clearing Jams</p>	 <p>Report All Unsafe Conditions</p>

POST IN PROMINENT AREA



# 3 Baggage Weight & Size Limitations

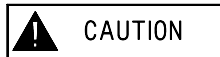
## 3.1 Capacities and Usage

### 3.1.1 Baggage Types

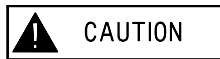
The conveyor system is designed to handle baggage types as follows:

- Normal: Items which can be processed by the equipment without special handling, including golf bags and duffel bags.
- Fragile: Items which, when in tote trays, can be processed as normal baggage including garment bags, hat boxes, bowling balls, shipping bags, etc.
- Oddsize: Items which exceed the size and weight limits listed cannot be handled by the equipment and must be manually transported.

The system is designed to accommodate a wide range of baggage materials including paper, cardboard, cloth, canvas, plastic, leather, wood, metals, etc. in both dry and wet condition and with or without wrapping, ties, wheels, and straps.



**Items with straps and/or wheels are meant to be transported with the wheels up off the conveyor and the straps trailing.**



**Always start the conveyor BEFORE loading any baggage. If a conveyor is loaded before starting, the motor may overload.**



### 3.2 Physical Characteristics

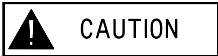
The following defines the physical characteristics of baggage used in the design of this system.

Normal Physical Characteristics for Ticket Counter & Curb Side			
Length (in.) Max/Min	Width (in.) Max/Min	Height (in.) Max/Min	Weight (Lbs.) Max/Min
54/6	33/3	25/3	120/1

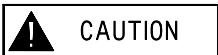
**NOTE:** This equipment is designed to convey NORMAL baggage checked by airline passengers.

Oversize Physical Characteristics			
Length (in.) Max/Min	Width (in.) Max/Min	Height (in.) Max/Min	Weight (Lbs.) Max/Min
156/6	50/3	34/3	150/1

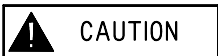
**NOTE:** This equipment is designed to convey OVERSIZE baggage checked by airline passengers.



**Luggage which is fragile, oddsize, or has exposed wheels or ball casters, are recommended NOT to be transported on standard baggage conveyors. These items should be transported either in a tote tray or by manual means.**



**Luggage which does not have at least one flat conveyable surface (baby carriages, soft bags, etc.) should be transported in a tote tray.**



**Live animals or birds are NOT recommended to be transported on standard baggage conveyors.**



## 3.3 Electrical Components

### 3.3.1 Pushbutton Stations

Pushbutton stations in the public view are flush mounted with a stainless steel cover plate.

**Emergency Stop Pushbuttons** are “maintained contact, push to stop, pull to reset, illuminated, mushroom head” type.

**Selector Switches** are key operated, where required.

**Pilot/Indicator Lights** are “push-to-test, transformer” type. Lens colors vary, depending on their applications within the system.

**Photoelectric LED type controls** are mounted on structural members attached to the machines.

**Relays and Time Delay Relays** are rated for their specific application.

### 3.3.2 Electrical Component Functions

#### 3.3.2.1 Overheight Detection

Overheight photocells are provided at every input to the system to detect bags that are too high to clear the lowest downstream obstruction for all possible routes. These photocells are set at 25-inches above the conveyor. As soon as the beam to the photocell is interrupted, the conveyor will stop.

The overheight pushbutton and overheight indicator lamp will illuminate. A reset pushbutton has been provided at the overlength position to restart the conveyor after the overheight bag has been removed from the photocell.

#### 3.3.2.2 Overlength Detection

Overlength photocells are installed at every baggage input to the system to detect bags that are too long. The overlength measurement circuit is programmed to stop the conveyor if a preset bag length is exceeded.

A reset pushbutton has been provided at the overlength position to restart the conveyor after the overlength bag has been removed from the photocell.

#### 3.3.2.3 Cascade Stop

Cascade stop photocells are provided within 6-inches (152 mm) of the discharge ends of all conveyors to stop the conveyor whenever the downstream conveyor is stopped and a bag passes the photocell. These photocells are located 1.5-inches (38 mm)



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above the conveyor. As soon as the beam to the photocell is cleared, the conveyor will restart.

#### **3.3.2.4 Jam Detection**

Jam detection photocells are provided on the discharge ends of all conveyors before power turns, incline conveyors, merges, and all other potential jam areas. When a jam photocell is blocked for a pre-set period of time (typically six seconds), the conveyor with the jam, and the conveyor immediately downstream will stop.

The jam indicator lamp will illuminate on the MCP and audible and visible alarms will activate. The light on the jam reset push button will be illuminated.

#### **3.3.2.5 Merge and Priority Control**

Merge photocells are provided at merges to perform jam detection, head end sensing, and priority control functions. See the Electrical Control Sequence of Operation for more details.

#### **3.3.2.6 Auto-Stop**

Upstream sections of transport conveyor not specifically controlled by START/STOP switches are provided with auto-stop photocells. If an auto-stop photocell does not sense a bag for an adjustable period of time, the conveyor section will stop. To restart the system, reset the auto-stop timer and hold until the conveyor restarts.

#### **3.3.2.7 Auto-Start**

Upstream sections of transport conveyor not specifically controlled by START/STOP switches are provided with auto-start photocells. When the auto-start pushbutton is pressed, start-up warning alarms will sound and the conveyors will restart.

#### **3.3.2.8 Start-Up Warning**

Audible start-up warning alarms are provided on the motor control panels corresponding to subsystems. Alarms and beacons activate for an adjustable period of time prior to the startup of the conveyor subsystem.

#### **3.3.2.9 Fault Warning Alarm**

An audible alarm is provided on the Control Cabinets controlling each subsystem. Whenever a fault causes a section of conveyor to stop or prevents it from starting, an alarm and one of the following indicator lights will illuminate.

#### **3.3.2.10 Alarm Silence**

An Alarm Silence momentary contact pushbutton is provided on the door of the Control Cabinet which silences the audible alarm when pressed. Multiple faults will always sound the associated fault warning alarm, even if a previous fault has not been cleared and a new fault occurs.

Do not extinguish the illuminated fault indicator until the fault has been corrected.



### 3.3.2.11 Emergency Stop

Emergency stop pushbuttons are located as indicated on the Electrical Drawings in Chapter M12. Additional pushbuttons are installed to ensure that operating and maintenance personnel can easily and quickly reach an emergency stop pushbutton from anywhere in the system.

When an emergency stop pushbutton is pressed, all conveyors in the subsystem stop and the lights in both the head of the pushbutton and the emergency stop fault light will illuminate.

When the emergency stop pushbutton is reset (pulled out), the light in the head of the pushbutton will extinguish. When the normal start switch for the conveyor is pushed, the start-up warning alarms will sound and all conveyors in the subsystem will start.

## 3.4 Abbreviations and Symbols

The following table lists, in alphabetical order, the acronyms and the definition/meaning used in subsequent sections of this document.

Table 1 Acronyms

Acronym	Definition
ATO	Airport ticket office
ATR	Automatic Tag Reader
BAS	Bag Advance Switch
BHS	Baggage Handling System
CB	Clear Bag Line
CD	Claim Device
CPU	Central Processing Unit
CS	Control Station
CS(X-NN)	Curb Side conveyor, X=sub system number, NN=conveyor number
DPB	Dispatch Push Button
EC	Encode Console
EDS	Explosive Detection System
EPB	Emergency stop push button
ETD	Explosive Trace Detection
GDM	Graphics Display Monitor
HMI	Human Machine Interface
HSD	High Speed Diverter
IATA	International Air Transport Association
IB	In bound
MCP	Motor Control Panel
ME	Manual Encode



Acronym	Definition
MEC	Manual Encode Console
ML	Main Line
MU	Make-up Unit
O&M	Operations and Maintenance
OS	Odd Size baggage conveyor
OSIB	Odd Size Inbound
PB	Push Button
PBS	Push Button Stop
PE	Photo-Eye/photocell
PLC	Programmable Logic Controller
PM	Preventive Maintenance
SB(X_NN)	Suspect Bag Line
SC	Sortation Controller
SG	Scan Gun
SPB	Start Push Button
SS(X_NN)	Security Screening Line
SSW	Selector switch
TC(X_NN)	Ticket counter conveyor
TX	Transfer conveyor

### 3.4.1 Glossary

The following table presents the terminology encountered in subsequent sections of this document along with the explicit definition of the term as it is used.

Table 2 Glossary

Term	Definition
Baggage	Any item placed on the baggage handling system conveyor with an attached a bag tag, i.e. IATA, 10 digit flight and 4 digit pier.
Hard jam	The time when bags for a flight are to be identified, processed, and tracked as late. Close out time is computed as the flight departure time minus a predetermined number of minutes. The predetermined number of minutes is an operator controlled configurable parameter, defined as the closeout period. The closeout time parameter is configurable per flight.
Late bag	If a bag that should have been diverted towards the ETD room is detected by either or both of the redundant photocells on SS, and/or has not been detected by either or both of the redundant photocells on SB, that bag has failed to divert to SB. This moment the conveyors SS, CB and SB will stop for Fail Safe purpose.
Missing Bag Jam	A sort device is full when the discharge end photocell is blocked for a period of time.
No-read	A bag seen at a barcode scanner array or a manual encode station after the flights close out time but before its departure time.



Term	Definition
Normal Baggage	The time when bags for a flight are to be identified, processed, and tracked as locked out. A flight's locked out time starts from its departure time plus pre-configured minutes and continues up to the System End-of-Day.
Odd size Baggage	A missing bag jam occurs when three consecutive bags are sensed at a conveyor head end photocell and are not detected at the next downstream photocell within a predetermined time period.
Out-of-Gauge Baggage	Due to Overload Trip (MOL)