

TISABAS™

REDUCING COSTS, TIME & INJURIES OF GROUND HANDLING OPERATIONS



On-the-job injuries. Speed of loading and unloading. Damage claims. Workman's comp costs. On-time departures.

These are some of the most common – and costly – issues around loading and unloading aircraft. Operational issues that every ground service manager needs to control for an efficient and safe operation with on-time schedules and on-budget operations.

The Solution: TISABAS

These are the same issues TISABAS was designed to solve, issues which are especially significant when loading and unloading narrow-bodied aircraft. TISABAS is a compact motorized folding conveyor system¹ that goes into the aircraft belly and mechanically moves baggage and cargo, eliminating the need to throw heavy baggage, mail and freight the length of the aircraft. This reduces time and operational costs while making ramp agent jobs safer, easier and more efficient.

Air carriers, ground-handling contractors and freight operators using TISABAS can:

- Decrease agent injuries
- Lower agent turnover
- Reduce damage to aircraft and baggage
- Load more in less time
- Reduce operational costs

TISABAS provides substantial time, safety and cost-savings advantages to ground handling operations. Contact us to discuss the ways TISABAS will benefit yours.



¹ US patent 10,486,905



When I first tried TISABAS, two of us unloaded a fully packed pit 4 (737-800) without breaking a sweat. NO stress on the back, shoulders or elbows. I was also impressed at how fast the sections folded down and lengthened as the pit emptied out. Two thumbs up!!!

Greg Reynolds, Ramp Service Agent

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TISABAS™: Significantly Different Than Other Belly Loading Equipment



- Portable
- Adaptable to a range of environments
- Highly efficient in loading and unloading
- Affordable for fleets of all sizes



These differences save time, lower costs, create efficiencies and, most importantly, provide a safer work environment for ramp crews. In addition, the competitors' equipment ranges from almost three to five times the cost of TISABAS with less-than-optimal functionality in many conditions.

We're often asked, 'How can TISABAS provide more benefits at a substantially lower cost?' Because we know every aspect of loading aircraft from the inside out and outside in. We've been doing it ourselves for over 30 years.

Deployment Outcomes	What This Means to Carriers
Reduced injuries & claims	Reduces injuries, workers' comp claims and time off the job
Less damage to cargo	Lowers damage payouts and insurance costs
Decreased damage to aircraft	Reduces repair costs and time out-of-service
Lightweight and easy set up	Quickly positions with 1 agent, operates with the 2 agents already working, no impact on schedules
Equipment functions inside of aircraft; removable	No damage to aircraft nor reduction to cargo capacity or fuel efficiency
Minimizes inefficiencies	Bags load faster and easier, agents move more weight in less time and deployed to other duties
Reduces loading time	Helps maintain on-time flight schedules; increases productivity as agents can perform other jobs
Decreases agent turnover	Reduced need to hire and train additional agents
Reduces operating costs	Savings deployed to other aspects of operations
Reduces manual work	Loading and unloading is completed more quickly
Significantly lower cost than other automated solutions	Return-on-investment quickly attained and savings deployed to other operational needs

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Business Case for TISABAS: Ramp Agents



During the last 60 years, aircraft bellies have grown substantially longer, with more items loaded and less time to do it. Unfortunately, ramp agents are still loading and unloading aircraft manually, throwing bags and cargo the length of the plane.

TISABAS was designed by a ramp agent to benefit ramp agents while, at the same time, delivering significant advantages to overall operations.

The estimated savings to an airline through using TISABAS is an average of \$1 million per gate over five years, savings that go directly to the bottomline.

1. TISABAS reduces workers' comp claims and premiums.

- A. Data shows that eliminating one worker's comp claim a year saves an airline \$122,000 in direct and indirect costs.
- B. Only 1/3 of injuries to ramp agents are actually recorded as OSHA lost workday cases demonstrating that the real impact of injuries is far greater.
- C. As an example, a medium-sized carrier averaged 100 injuries a year at their hub. Estimated cost per injury was \$3400 for a total impact to this airline of \$340,000 at that location.)

2. TISABAS reduces work-related musculoskeletal disorders and related costs.

- A. With 2/3 of injuries unreported, the real cost to airlines is actually 167% greater than estimated.

B. There are also other productivity and cost impacts. A tired and sore employee is

- less efficient
- calls in sick more often
- has lower morale
- is more likely to seek employment elsewhere

3. TISABAS reduces costly agent turnover.

- A. Data demonstrates that it costs \$7000 to train a new ramp agent. This does not include the expense of hiring nor the period of lowered productivity and the loss of efficiencies with an inexperienced crew.
- B. Damage to equipment is also more likely with an inexperienced crew.

4. TISABAS decreases expensive damage to an aircraft belly.

- A. Throwing baggage and cargo often results in dents, scrapes and holes. Data from a station with only 4 daily departures showed a cost of \$20,000 per year in emergency maintenance to repair belly damage.
- B. Repairing aircraft damage also results in significant delays and attendant costs.

5. TISABAS reduces the cost of damaged customer belongings.

- A. What is the expense of damaged bags or damaged cargo?
- B. What are the tangible and intangible costs of unhappy or lost customers because their bag or cargo was damaged and any compensation paid?

6. TISABAS reduces the costs associated with delayed aircraft.

- A. Four of the seven top reasons an aircraft is delayed are associated with belly loading. Delays mean dollars lost.
- What is the real cost of a delayed flight?
 - What is the cumulative impact of a delayed flight that never gets back on schedule?

7. TISABAS expands the hiring pool.

Because this is a physically-demanding job, ramp agents are predominantly young and male. Making the job less strenuous will expand the applicant pool.

8. The average amount of cargo loaded on an aircraft is increased.

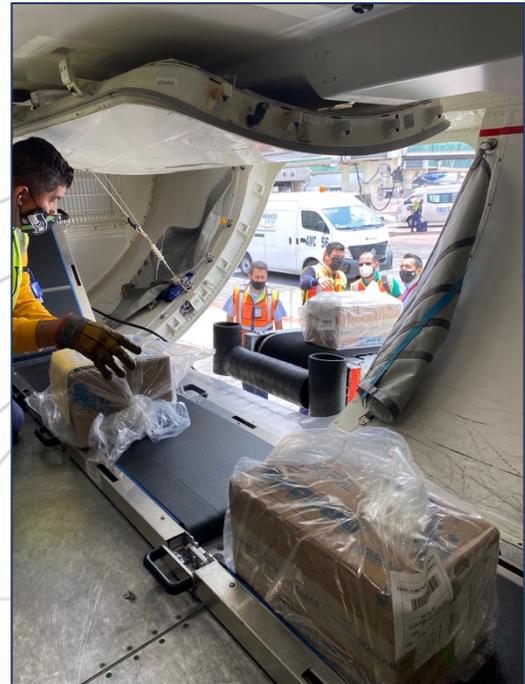
Belly-loaded cargo is bumped regularly because the crew is too tired or overworked to complete loading in the time available.

9. TISABAS requires little additional training.

- A. It is designed to work within the existing operation and with the same belt loader placement.
- B. Understanding a few easy features of TISABAS is the extent of the training; no need to track who has received training and who hasn't.

These are some of the most common – and costly – issues around loading and unloading aircraft. They are also operational issues that every ground service manager needs to control for an efficient and safe operation with on-time schedules and on-budget operations.

See how TISABAS will benefit yours.



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TISABAS is a registered trademark of Ramper Innovations • US patent 10,486,905

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TISABAS™ Specifications

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- **Extended (Flat) Dimensions**
Length 20 ft x Width 2 ft x Height 3 in/Length 6.1 m x Width .61 m x Height 7.6 cm
- **Folded Dimensions**
Length 24 in x Width 21 x H 32 in/Length 60.9 cm x Width 53.3 cm x Height 81.3 cm
- **Weight**
200 pounds/90.72 kg
- **24 Volt System**
Converts from 14V & 72V
- **Variable Speeds**
16 bags a minute
22.9 bags a minute
- **Weight-Bearing Capacity**
150 pounds per ft²/732.4 kg per m²
- **Load-Drop Capacity**
75 pounds from a height of 3 feet/34.02 kg from a height of .91 m
- **All-Weather Operations**
Meets IP 65 specs
- **Temperature Range**
-20F to +120F/-29C to +49C
- **Safety Enhanced**
- **Ergonomically Designed**
- **Ramp Agent Approved**
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- **Sectional Power Switches**
Belts only operate when section is flat
- **V- Belt Technology**
Allows belts to track without adjustment
- **Belt Material**
PVC Flexam 80, .079 in/.2 cm thick; Clipper lace
- **Drive Rollers**
Insight, motorized IP66 rated to -30 F/-34C
- **Drive Card**
ConveyLinx ERSC-HTF -30 F/-34C

- **Control Buttons**
Directional, Fast, Slow, Stop / Pushbutton momentary, flush head IP 65 rated
- **Aluminum Frame**
- **Composite Easy-Grip Handles**
- **Warranty**
One year or 2080 hours

Contact us for more details or to discuss how TISABAS can reduce costs and injuries of your ground handling operations.

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