



# HoverTech EMS Overview

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**ABOUT HOVERTECH**

HoverTech International is a privately held company founded in 1997 with corporate offices in Bethlehem, Pennsylvania. HoverTech’s mission is to revolutionize the way the healthcare industry addresses patient transfer and repositioning by solving customer challenges, resulting in a safer environment for both the crew and the patient. As the world leader in air assisted safe patient handling products, HoverTech products are currently distributed in the United States, Canada, the United Kingdom, Europe, the Middle East, Australia, New Zealand and the Pacific Rim.

HoverTech prides itself on customer service and continues to have account-dedicated customer service professionals who answer the phone personally every day.

## TECHNOLOGY SUMMARY

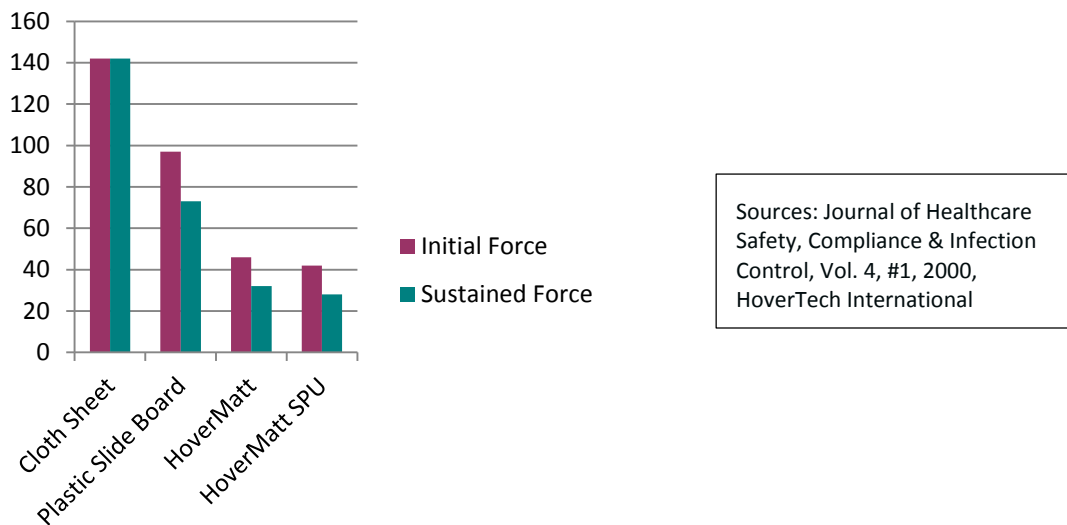
### ***The Principle of HoverMatt® Technology***

After the patient is placed on the HoverMatt transfer mattress, low pressure air from the air supply will inflate the mattress. At the same time the air is supporting the patient, the air is also escaping from strategically placed perforations in the underside of the HoverMatt. The escaping air acts as a lubricant to reduce friction, which facilitates the transfer.

### ***Study: Evaluation of patient transfer tasks using multiple data sources***

Summary: This study uses a force gauge to evaluate multiple transfer technologies performing a stretcher to bed transfer with a 415 lb patient.





Result: Force required with HoverMatt is approximately 80% less than with traditional sheet transfer.



### ***The Principle of HoverJack® EMS Evacuation Technology***

The HoverJack EMS Evacuation is an inflatable evacuation device designed to be used in conjunction with the HoverMatt transfer mattress. The HoverJack EMS Evacuation has 4 inflatable chambers. The air chambers inflate to lift the bariatric patient from the floor in a supine or seated position, creating a no-lift environment for the crew. The HoverJack EMS Evacuation is an optimal solution for lifting, evacuating, and laterally transferring and may even be used to transport patients up or down stairs.

## PRODUCT RANGE

<p><b>AIR200G/ AIR400G Air Supply</b></p>	<p>Our single speed 800W or 1100W air supplies are designed to be used exclusively with the HoverTech product line. Air supplies are AC compatible and are safe to plug into the home, ambulance, long term care or acute care setting.</p>	
<p><b>HoverMatt® Air Transfer System</b></p>	<p>The HoverMatt® Air Transfer System is the number one choice of hospitals for lateral patient transfers and patient repositioning. When inflated, a cushion of air beneath the mattress enables the crew to safely transfer patients without lifting or straining. By reducing injuries related to lateral transfers and repositioning, the HoverMatt helps to improve staff retention while meeting legislative guidelines for safe patient handling.</p>	
<p><b>HoverMatt® Single-Patient Use Air Transfer System</b></p>	<p>The HoverMatt® Single-Patient Use (SPU) inflatable transfer mattress works just like the reusable HoverMatt, using a cushion of air that enables the crew to safely transfer patients without lifting or straining. Additionally, as a single-patient use product, it reduces costs and logistics associated with reprocessing, as well as reducing the possibility of cross-contamination.</p>	
<p><b>HoverJack® EMS Evacuation</b></p>	<p>The HoverJack® EMS Evacuation has been developed specifically for the Emergency Medical Services market. The HoverJack® EMS Evacuation is a device designed to facilitate extraction of a patient from a residence or health care facility before transferring onto the ambulance stretcher. The HoverJack® EMS Evacuation is fully inflated to bed or stretcher height so the patient can be laterally transferred onto it. The safety straps and foot-end pouch hold the patient securely, while the Teflon-coated bottom surface allows for easy transport to the nearest stairwell. The upper chambers can then be deflated for descent, as the caregivers slide the HoverJack® EMS Evacuation and patient down the stairs to the stretcher or ambulance.</p>	

## PRODUCT CASE STUDIES

### HOVERMATT® AIR TRANSFER SYSTEM/ HOVERJACK® EMS EVACUATION CASE STUDY

Physicians Transport Service

360 Herndon Pkwy, Herndon, VA 20170

#### Comparison of Two Similar Transports with and without HoverTech Products

##### **Situation**

*Ambulance Service Implements HoverTech International Products to Facilitate Bariatric Transports*

Physicians Transport Service is Northern Virginia's largest private ambulance service, operating out of 5 primary stations strategically placed throughout Northern Virginia. This study is a comparison of two bariatric patient transports: one (Patient 1) before HoverTech Products were available, and one (Patient 2) after HoverTech Products were integrated into their ambulance system.

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##### **Patient 1 – Dispatch**

39 year old Male

Unable to walk or go to bathroom

No acute distress

On second floor of townhome

Call taker advises that wife states patient is "larger than most men."

##### **Initial Resources (Personnel):**

Engine (4)

Medic (2)

**From Alarm to Clear:** 8 hrs. 1 min.

**Patient Assessment:** Awake, oriented male without dyspnea, work of breathing or complaint of pain. Speaking in multiple word sentences without gasping, pursing lips or audible noise. Answers questions appropriately. Color pale, skin moist and very warm (102° temporal). Radial pulse 104, regular. Respirations shallow, 32. Breath sounds unable to be assessed below apes due to mass. BP184/120. Lower legs leathery, red, with open sores. O<sub>2</sub> provided at 4 Lpm with ETCO<sub>2</sub> device (initial 72 ETCO<sub>2</sub>). Patient states he does not know his weight. Last left room 10+ years ago; last job ended 2 weeks ago – programmer for video games. BGL "high" on glucometer. Patient states he needs to go to the doctor

due to his inability to walk and get to the bathroom. Patient could not be moved with existing resources.

**Additional Resources (Personnel):**

Heavy Rescue Squad (4)

Ladder Company (4)

EMS Supervisor (1)

Battalion Chief (1)

Safety Officer (1)

Additional Engine (4) **Total on Scene = 21**

Additional Medic unit (2) called in later for 2 FF who were injured during the event.

**Admission Information:** Height: 5'8", Chest 80", Girth at waist 78", Weight 636 lbs.

***Patient expired 4 weeks after admission.***

**Patient 2- Dispatch**

52 year old Male

Unable to walk

Trouble breathing

No acute distress

On fourth floor of condominium building, no elevator

**Initial Resources (Personnel):**

Engine (3)

Medic (2)

Heavy Squad (4) with

Bariatric Transport Unit (F-450 pickup with cap)(1)

EMS Supervisor (1)

Battalion Chief (1)

**From Alarm to Clear:** 2 hrs. 36 min.

**Patient Assessment:** Awake, oriented male with dyspnea and increased work of breathing. No complaint of pain. Speaking in 1-2 word sentences with gasping, pursing of lips and audible noise. Color pale, skin moist and cool. Circumoral cyanosis. Radial pulse 144, irregular. Respirations shallow, 50. Breath sounds unable to be assessed below apex due to mass. BP 200/140. SpO<sub>2</sub> 83% room air. O<sub>2</sub> provided a 4 Lpm with ETCO<sub>2</sub> device (initial 72 ETCO<sub>2</sub>). Patient states he thinks he is about 800 lbs. Last left room 6+ years ago. Runs trash hauling business from his home. CPAP began. 12 lead obtained. No STEMI but rapid a-fib noted. IV established BGL 543.

Medical control ordered calcium channel blocker to slow heart rate. Advised of situation and MC arranged for bariatric bed to be brought to ED from med/surg floor. CPAP results included SpO<sub>2</sub> at 95%, color much better, RR 36, HR 103, BP 182/98. After HR reduction a neb was provided in line with CPAP.

Rescue Company set up HoverJack EMS Evacuation and HoverMatt in room while breaching a 5' space from bedroom to main hall. Patient placed on HoverMatt with log roll technique and air pillow to maintain airway. HoverMatt used to move patient onto HoverJack. HoverJack then used to move patient to ground floor with 6 personnel and patient transferred to bariatric cot using HoverMatt. Patient lifted into Medic unit with 8 personnel and transferred to local hospital ED. Patient moved with HoverMatt to bariatric bed in ED.

**Total Resources:**

Units as above = 12 Total personnel. There were no injuries.

**Admission information:** Height 6'11", Chest 93", Girth at waist 100", Weight 834 lbs.

***Patient transferred to rehab hospital 2 weeks later. Patient discharged to home after 3 months, walking on his own and weighing 500 lbs.***

**Conclusion**

The implementation of HoverJack and HoverMatt positively impacted the transport calls in the following ways:

	<b>Patient #1 without HJ/HM</b>	<b>Patient #2 with HJ/HM</b>
Total Time from Alarm to Clear	8 hrs 1 min	2 hrs 36 min
Number of Personnel on Site	23	12
Number of Injuries to Response Team	2	0

The associated costs of the transport of Patient 1 compared to that of Patient 2 include costs of deploying 23 personnel (versus 12 for patient 2), as well as the expense of units and equipment. The length of the calls at 8 hours for Patient 1 and 2-1/2 hours for patient 2, as well as the direct and indirect costs from the injury of 2 Firefighters transporting Patient 1 must also be considered.

## **REFERENCE ACCOUNTS**

Physicians Transport, Herndon, VA - Randy Breton 571-323-0800

EMS at University Hospitals, Cleveland, OH - Dan Ellenberger 440-735-3513

Uwchlan Ambulance Corps, Eagle, PA - John Applegate 610-363-1067

## **WARRANTY**

### ***Product Warranty***

All reusable HoverTech International products are fully warranted to be free from manufacturer's defects in materials and workmanship for 1 year.

Single-Patient Use and Disposable Products are fully warranted to be free from manufacturer's defects in materials and workmanship and will be replaced free of charge within 180 days of purchase.

Warranty begins on date of in-service by a HoverTech international representative or shipment date.