



# BODY CAVITY BOMBS:

## A VERY REAL THREAT?

With increasingly sophisticated technology available to those in the aviation security industry, individuals wishing to carry dangerous or illegal substances and weapons onto flights have been forced into using ever more intimate methods of concealment. **Alexandra James** discusses body cavity bombs, questions whether they are as imminent a threat as we once thought, and highlights lessons that can be learned from previous incidents.

It was not so long ago that the very idea of suicidal terrorism on a plane was unthinkable; the concept of a person willing to take their own life and those of others at 30,000 feet was something the industry preferred not to consider. Many point to the events of 11 September 2001 as the first act of suicidal terrorism. In fact, the concept was borne some seven years earlier in 1994 when Hezbollah infiltrated an explosive device onto a domestic Alas Chiricanas flight in Panama. It is believed that a passenger, Jamal Lya, intentionally detonated the device killing himself and all 20 other souls on board.



*Jamal Lya is suspected of detonating the device which brought down Alas Chiricanas flight 901 in 1994 (Credit: FBI)*

Over the years, this once inconceivable form of terrorism has forced itself to the top of aviation security agendas. Malicious individuals are going to increasing lengths in order to take life, to wreak havoc upon infrastructure, and also to illegally transport controlled substances. One very significant aspect of this evolution has been how the explosive device is hidden; we have seen IEDs being transported – and detonated – closer to the terrorist’s body than ever before, from suicide vests, belts and devices concealed within shoes, to Umar Farouk Abdulmutallab’s underpants bomb. As a response, countermeasures have also brought security agents and technology closer to the bodies of passengers; from TSA’s new pat-down protocol introduced in March to the introduction of millimetre-wave scanners to identify objects concealed under passengers’ clothing.

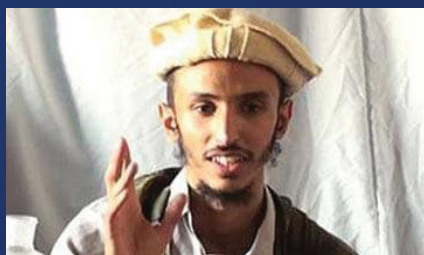
## “WHAT NEXT?”

“What next?” is the familiar refrain of the aviation security professional. If we are to continue the linear sequence of increasingly intimately concealed devices then body cavity bombs do appear to be the next logical step (see Robert J. Bunker and Christopher Flaherty’s *Body Cavity Bombers* for a fascinating and very thorough account of the evolution of the body bomb). In fact, there have been two previous incidents involving such devices:

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In 2009, 24-year-old al Qaeda operative Abdullah al-Asiri attempted to kill Prince Muhammad bin Nayef, head of counter-terrorism in Saudi Arabia. Al-Asiri is thought to have hidden 100g of PETN in his rectum and then travelled (by air) to Nayef’s home in Jeddah, under the pretence of surrender and claiming that he would convince other al Qaeda operatives to give themselves up. According to Europol’s assessment of the attack, the bomb is thought to have been detonated via radiofrequency after a phone call was made to an al Qaeda operative in Yemen during the meeting between al-Asiri and Nayef. Nayef sustained only light injuries and survived the attack.

Three years later, in 2012, the Taliban attempted to assassinate Asadullah Khalid, then the head of the domestic intelligence agency of Afghanistan. A ‘peace envoy’, Hafiz Mohammad, was sent claiming to have important information, which he would only deliver to Khalid in person. Mohammed was sent alone into an armoured room monitored by CCTV cameras where he was told by Khalid’s aides to strip. Having apparently proven that he was not carrying a weapon he was taken to meet with Khalid, at which point the device was triggered (although the method of detonation is unclear). Khalid was injured and required surgery but survived the attack.



*In 2009, Abdullah Hassan al-Asiri attempted to assassinate a Saudi minister with a device concealed within his rectum*

Both of these were examples of bombs that had almost certainly been inserted into the rectum, a fairly simple method of concealing items that is well established by prisoners and the drug smuggling trade. However, intelligence received by MI5 and the US government in 2011 suggested that al Qaeda had also started recruiting medical students sympathetic to their cause, and experimenting with surgically implanting explosive devices into the breasts and buttocks of suicide bombers, (another more recently developed strategy also used by drug smugglers).

Similarly, in 2008, al Qaeda attempted to blow up a flight from Iraq to the US by stitching bombs into the bodies of stray dogs, which were then transported by animal rescue organisations to be adopted in the US. The plan failed, however, because the dogs died from the procedure prior to boarding and the devices were discovered.

There is enough evidence, therefore, to believe that the development of internally concealed bombs was very much on terrorists’ minds, particularly between 2006 and 2012. It is a method that exploits known vulnerabilities in aviation security systems since equipment currently used (i.e. metal detectors and body scanners) is not powerful enough to penetrate the body and detect items concealed within.

## LIMITS AND CHALLENGES OF BODY BOMBS

So why have we not seen more recent incidents involving internally concealed devices? Christopher Flaherty, co-author of *Body Cavity Bombers* suggests it is simply “too difficult to pull off”. It does appear that the closer the bomb is to the body, the harder it is to get it right: Richard Reid’s shoe bomb failed to detonate, and the underpants bomb of 2009 malfunctioned leaving Abdulmutallab rather singed and disfigured but basically still intact. The two body cavity bomb attempts described also failed – albeit in a spectacularly grizzly way – and both of the intended victims survived, despite being very close to their would-be assassins.

Flaherty and Bunker suggest the failure of the attack on Prince Nayef was due in part to the fact that the

"...the positioning of the IED in the rectum meant that the blast followed the path of least resistance – downward rather than outward, leaving the bomber's torso above the waist intact..."

bomber's body absorbed the majority of the blast, essentially protecting his victim. In addition, there is an issue with directing the blast; the positioning of the IED in the rectum meant that the blast followed the path of least resistance – downward rather than outward, leaving the bomber's torso above the waist intact.

Also, since the main reason for concealing a device inside the body is to avoid detection, a minimal amount of metal components may be used. Europol's analysis of the effects of the 2009 al-Asiri blast noted a lack of shrapnel in the surrounding walls and floor. This undoubtedly would have made it possible for al-Asiri to pass unnoticed through airport security metal detectors on his way to Jeddah (at which point, it is thought, the device would have already been in situ). However, this also would have considerably reduced the lethality of the device due to reduced pressure build-up and a lack of shrapnel.

In order to compensate for these issues and to produce a blast large enough to cause death and serious

damage, a significant quantity of explosives would be required. While certain body cavities are capable of holding quite astonishing amounts (see next section), it is unlikely – though not impossible – that an individual is capable of carrying the required quantities without being in obvious pain, and therefore be detectable through behavioural analysis.

## BODY CAVITIES AND THEIR CAPACITIES

While effective detonation of a bomb within the body has been proven to be challenging, we cannot ignore the fact that the human body does give ample opportunities for those wishing to smuggle illicit items and substances into highly controlled environments. Drug mules, prisoners and visitors to prisons have been successfully smuggling contraband within body cavities for decades, and if an individual is capable of smuggling drugs across borders then they are capable of smuggling the components of a bomb onto a plane inside their vagina or rectum, and then extracting, assembling and detonating them once on board.

It has been suggested that men are capable of stowing greater quantities than women, however the capacities of various cavities can vary widely from individual to individual. The following are some examples of body packing methods commonly used to smuggle objects, and items that have been found inside various body cavities:

### Rectum

While the average rectum is capable of holding around half a litre before the impulse to 'evacuate' becomes overpowering, individuals, particularly 'career mules' have been known to 'train' their sphincters and stretch out their rectums in order to hold up to three times that amount. Prisoners have been known to conceal mobile phones, improvised weapons, drugs and even a hand grenade. In fact, in 2011 in Sarasota County, Florida, 34-year-old prisoner Neil Lansing was found to have anally concealed 17 Oxycodone pills, a cigarette, six matches, a flint, an empty syringe with an eraser over the needle, a lip balm container, an unused condom, a CVS receipt and a paper coupon.

### Vagina

On 7th September this year, Illinois police arrested 20-year-old Amika Witt. During a cavity search of her vagina, they found a Kimber.380-calibre handgun, fully loaded and with a bullet chambered.

"...during a cavity search of her vagina, they found a Kimber.380-calibre handgun, fully loaded and with a bullet chambered..."



Ashley Cecilia Castaneda was arrested in 2015 and was found to be concealing a loaded Smith & Wesson in her vagina.

### Breast Implants

In February last year, a 24-year-old Colombian woman was arrested at Frankfurt for attempting to smuggle a kilogram of cocaine inside breast implants. Similarly, in June 2015, it was reported that Paola Deyanira Sabillon, 22, was taken aside after she became especially nervous while queuing for security screening at Bogota Airport, where she was due to catch a flight to Spain. X-rays revealed recent surgery on her breasts, leading to her admitting to carrying 1.5k of liquid cocaine.



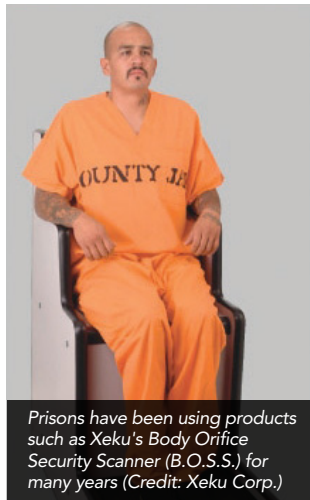
Breast implants containing cocaine were removed from a Panamanian female passenger who landed in Barcelona from Bogota in December 2012 (Credit: Spanish Interior Ministry)

## POSSIBILITIES FOR DETECTION

While body cavity bombs may be limited with regards to lethality (although this might not always be the case as explosive technology is always developing), they are almost impossible to detect, particularly at the average airport checkpoint where throughput pressures, customer service and budgetary restraints all have their parts to play.

One of the most significant lessons to be learned from the 2009 body bomb incident is that al-Asiri travelled by air to Jeddah and passed undetected through a number of airport checkpoints (and a search conducted by Prince Nayef's own security agents) with the device already in situ. The industry was fortunate that in this particular case, the flight was not his intended target.

Al-Asiri is thought to have passed through at least two archway metal detectors and was deemed safe to fly. Many metal detectors are powerful enough to detect metallic objects located inside the body; however, their functionality is limited to detecting only metal. They therefore cannot detect explosive devices that are designed



Prisons have been using products such as Xeku's Body Orifice Security Scanner (B.O.S.S.) for many years (Credit: Xeku Corp.)



to have minimal amounts of metal components (as it is believed al-Asiri's was). Additionally, both millimetre wave and backscatter X-ray machines (used as body scanners) are designed only to detect items under the clothes and therefore cannot penetrate the body.

Behavioural analysis has been shown to be effective in identifying individuals who could pose a threat. The previously mentioned Colombian breast implant smuggler was foiled in Frankfurt due to the fact she was obviously in pain during screening, leading security agents to

discover fresh scars beneath her breasts. Similarly, in September this year, customs officials in Sri Lanka stopped a 45-year-old man who was walking with some difficulty. He turned out to have just under a kilogram of gold hidden in his rectum. However, security agents must be wary of relying on current technologies to confirm suspicions aroused by an individual's behaviour, since no screening technology currently deployed is capable of confirming whether or not an individual is internally concealing dangerous items.

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“...a dose equivalent to eating 2.5 bananas or spending 10-20 minutes on a plane at cruising altitude...”

Currently, transmission X-ray is the only technology capable of this. While machines using this technology are commonly used by customs authorities for the selective screening of individuals suspected of smuggling drugs and other controlled substances and items, they are not currently being deployed for use in security screening. Financial constraints obviously play a large part in this issue. However, Jan Steven van Wingerden of OD Security suggests that, “Customs and security could share the X-ray body scanner for selective screening. However,” he continues, “This is not happening because sharing a body scanner is complicated, and the machines are generally only deployed at arrivals, not at departures.”

In addition to a lack of financial resources, Leonid Zelenkevich of Adani points out that a lack of legislation and processes on a governmental level are also responsible: “The only guidelines available to the industry are those issued by the American National Standards Institute (ANSI).”

Despite a lack of guidelines, Zelenkevich claims Adani does receive enquiries from airport security officials concerned about internally concealed weapons and explosives, particularly in high-risk areas such as Egypt, Nigeria and Saudi Arabia.

The other issue to be considered of course is radiation exposure. According to the measures laid out in the ANSI guidelines, an individual would need to be scanned 1,000 times in a year



by a transmission X-ray machine like Adani's Compass system in order to be exposed to levels of radiation that would be considered unacceptable by those guidelines.

Zelenkevich claims that, “The Compass system emits a dose equivalent to eating 2.5 bananas or spending 10-20 minutes on a plane at cruising altitude. They are also fitted with a radiation detector that measures the radiation levels of each individual that is screened. If they have already reached

the safe limit, the machine alerts the operator and gives them the option to perform a ‘dummy’ scan, which only gives the impression of performing a scan without emitting any radiation.”

However, Steve Smith of Tek84 also highlights the logistical issue of resolving false alarms: “Over the last two years the use of transmission X-ray body scanners has greatly expanded in prisons and jails, with some 1,000 units being sold worldwide. That's because they can easily wait for each false alarm to be resolved, either by transporting them to a hospital for a medical exam, or seeing what they expel over the next 2-3 days. These are common routines in correctional facilities, making false alarms tolerable. Airport screening is exactly the opposite; every false alarm would be a nightmare for the passenger and security personnel.”

## CONCLUSION

The Europol report on the 2009 Al-Asiri incident concluded with the following statement: ‘Should there be conclusive proof that the attack took place with an IED concealed inside the perpetrator's body, it would definitely have an impact in aviation safety and the current standard operational procedures in place should be reviewed.’

The fact is that the majority of airports internationally are simply not equipped to detect internally concealed explosives or weapons. The industry has a habit of only acting once there has already been an incident. Many may argue that the threat is not currently serious enough to warrant investment in technology, and they may well be right, but we shouldn't ignore the fact that the potential is there. Let's not forget that it wasn't so long ago that suicidal terrorism at 30,000 feet was unthinkable, too. ■

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