

[the first article on the list is now only available on Globe Plus, so I don't have access to it in its final form. The second item follows]

Wedding music fit for a prince and his bride

William and Kate's wedding music is also being kept under wraps, which leaves us free to speculate. A little 'Water Music,' anybody?

By Marcia Adair, Special to the Los Angeles Times

April 27, 2011

[a shorter version of this appeared in the G&M on the same day]

Prince William and Catherine Middleton are stylish young Britons, well-placed to encourage the monarchy into the 21st century, beginning with their wedding Friday morning. Like the dress, the cake and the honeymoon, the details of the wedding music have been kept secret. William and Kate will no doubt have encountered a problem familiar to all engaged couples: balancing their taste with that of their respective families.

Elton John is invited, but since the Church of England does not allow secular music in a wedding ceremony proper, he will have to save "Candle in the Wind 3.0" for the private reception.

We know that the London Chamber Orchestra as well as the choirs of Westminster Abbey and St. George's Chapel in Windsor will be performing, but the media doesn't yet know what. In the absence of facts, we are free to speculate wildly. Hurrah!

The Walk

All Anglican services begin with a procession consisting of the crucifer and acolytes (the cross and candle bearers), the vergers and the choir. The clergy usually follow, but in a wedding service, they wait for the bride and lead her and her father down the aisle as a separate group. In most royal weddings, the music has been a march for organ or Jeremiah Clarke's "Prince of Denmark's March."

For a change, I'd plump for "Alla Hornpipe" from Handel's "Water Music." It's jaunty, easily repeatable to match the walk and, best of all, takes advantage of all the fanfare trumpeters that will be on hand.

The Psalm

A psalm is included in nearly every Anglican service. It is generally read in smaller churches without a good choir, but in cathedrals, it is always sung. Psalm 67 — "May God be gracious to us and bless us and make his face to shine upon us" — is part of the 1662 Book of Common Prayer wedding liturgy and was therefore sung at the wedding service of the then-Princess Elizabeth and Prince Philip in 1947 as well as Prince Charles and Diana's in 1981. This is one place where we might hear a new commission.

The Hymns

The sound of 1,900 guests mumbling through a hymn they don't know would be decidedly unattractive and since most in the assembly aren't likely regular churchgoers, sticking to the classics is ideal. A few other royals have chosen "Immortal, Invisible, God Only Wise," but something a little more tuneful, such as "Love Divine, All Loves Excelling," "Praise, My Soul, the King of Heaven" or "The Lord Is My Shepherd (Crimond)" seems a touch more modern.

The Crimond tune for "The Lord Is My Shepherd" was unknown when Elizabeth chose it for her wedding. Four days before the ceremony, Elizabeth and her sister, Margaret, summoned abbey organist William McKie and sang him the descant, so he could write it down for the choristers.

Anthem

If the father of the groom has anything to do with it, "I Was Glad" by Hubert Parry will be sung by the choir while William and Kate move to the high altar for prayers. Charles chose this piece for his wedding to Diana, and Parry is a favorite composer of his. Another possibility is the iconic "Jerusalem," also by Parry, though it is too closely tied with sporting matches nowadays to be seriously considered for a royal wedding.

Signing of the Register

This is where the combined forces of two choirs, orchestra and organ really get to shine. It is

possible that some of the music here will be a new commission, which, along with the choice of soloist, would give us a good indication of the new couple's musical taste.

The field is wide open, but two rather lovely pieces are "Ubi caritas" by Maurice Duruflé and "Exsultate, Jubilate" by Mozart. "Ubi caritas" is for unaccompanied choir and begins and ends with the text "Where charity and love are, God is there." "Exsultate, Jubilate" is for soprano and orchestra and sets a religious text, which means technically it is sacred music. The motet's unapologetically impish coloratura, however, is straight out of Mozart's opera playbook. The queen's son Edward and his bride, Sophie Rhys-Jones, chose the Duruflé for their 1999 wedding, and his brother Andrew and Sarah Ferguson chose the Mozart in 1986.

Recessional

Elizabeth and Philip walked out to Mendelssohn's "Wedding March" 64 years ago, but tastes have changed since then. The new cliché for royal and regular weddings alike is Charles Widor's "Toccata" from "Symphony No. 5." It's French, it's sparkly and it's an excellent accompaniment for regally floating down the aisle on the arm of your prince.

Instructing the organist to turn it up to 11 for Alexandre Guilmant's Grand Choeur in D Opus 18 and J.S. Bach's "In Dir Ist Freude" (In Thee Is Gladness) should be enough to encourage the guest to take their chitchat outside.

Cultural Exchange: The world cottons to 'Little Mosque on the Prairie'

The gentle Canadian sitcom is seen in 83 countries, but the U.S. isn't one of them.

April 10, 2011 | By Marcia Adair, Special to the Los Angeles Times

— The land of hockey, toques and the apology. Cast your eye a little farther down the list of things Canada has given the world (past zippers, Jolly Jumpers and five-pin bowling but well before Céline Dion) and you come to Canadian television.

There was "The Beachcombers," "Due South," "Kids in the Hall" and "Road to Avonlea," but unlike Australia, the U.K. or Quebec, which have thriving industries, English Canada's approach to homegrown programming has been more tortoise than hare.

Happily, the fortunes of Canada's television have improved with the success of "Trailer Park Boys," a mockumentary about life in a Nova Scotia trailer park, middle-of-nowhere comedy "Corner Gas" and co-production "The Tudors." The show that has been the calling card for the possibilities of Canadian TV, however, is "Little Mosque on the Prairie."

"Mosque" was conceived in the wake of the 2005 Danish Muhammad cartoon crisis by producer Mary Darling, her husband, Clark Donnelly, and writer Zarqa Nawaz when they met at the Banff Television Festival. The basic premise was: What would it look like if a Muslim born and raised in Canada became an imam?

As the concept developed further, the conceit became a second-generation Canadian imam from Toronto arrives at his post to discover the mosque is in the parish hall of the local Anglican church. Culture clash and its resultant hilarity ensue.

Mercy, the fictional small Saskatchewan town in which "Mosque" is set, is populated by characters designed to play with our ideas of Other. The liberal imam is ex-lawyer Amaar Rashid. He eventually marries Rayyad Hamoudi, whose parents, Sarah and Yasir, also live in town. Sarah converted to Islam to marry Yasir. Completing the main cast is Fred Tupper, a shock jock radio DJ/bigot; Fatima Dinssa, a conservative Nigerian Muslim who owns a popular café in town; Baber Siqqidi, the local grump; and the mayor, Anne Popowicz, who doesn't care what anybody does as long as it results in less work for her.

The humor is deliberately gentle — more "Vicar of Dibley" than "Twin Peaks." Explained Darling, "We wanted the show to also have heart, kind of like Archie Bunker exploring racism in America. Comedy dilates the heart and makes things more palpable." The general rule for the show's writers is that they never make fun of the sacred center of either faith.

For Nawaz, exploring the issues in her community was more important than creating something purposely controversial. The widely held view that Muslims are humorless pedants just didn't connect with Nawaz's experience as a second-generation Canadian Muslims. Showing that modern Muslims are self-aware and can laugh at themselves has been a big part of "Mosque's" success. The program drew 2 million viewers for its first episode, and an average of 1 million for the rest of its first season.

In an episode titled "Jihad on Ice," viewers find the answer to the question on the nation's lips: Can Muslims curl? It turns out they can. And rather well at that.

All Canadian television networks are required to have at least 60% of their content produced in Canada, but most get around it by counting news broadcasts, reality shows and daytime television programming. The rest of the time is filled with shows from the U.S. such as "Grey's Anatomy" and "Dancing with the Stars" "Mosque" is broadcast on Canada's national public broadcaster. The CBC is different from PBS in that it is supported directly by the government and therefore obligated to create programming that reflects Canadian culture.

"I think the show talks about the success of multiculturalism in Canada and integration," Nawaz said. She grew up in Toronto in the 1970s with parents who immigrated from Pakistan via Britain. "I am a Canadian of Muslim faith. I don't have a chip on my shoulder. No one cared if I wanted to pray five times a day or wear a hijab. I could just do my own thing."

The genius of "Mosque" is that the characters resonate with viewers all over the world. The show is broadcast in 83 countries, including the United Arab Emirates and Turkey; the format was sold to 20th Century Fox in 2008 for a U.S. remake but nothing came of it. Nawaz's explanation: "We didn't have 9/11, and we have a public broadcaster. 9/11 affected the American psyche in a major way, and you have to be sensitive to that."

Last autumn Canadian-American relations were put to the test courtesy of Wikileaks. It seems an unnamed U.S. diplomat posted in Ottawa found the show "noteworthy as an indication of

the kind of insidious negative popular stereotyping we are increasingly up against in Canada." The incident in question? Baber, the town grump, runs into a "rude and eccentric" U.S. consular officer while trying to get his name off the no-fly list. Although treated as a matter of amusement in the Canadian press, it was enough to prompt Secretary of State Hillary Clinton to write "Mosque" producers a letter praising the show for fostering cross-cultural unity.

Filming of the sixth season is beginning this spring, and although ratings are lower than they were in the first season, they are holding steady at 500,000, considered good here. Against all odds, this gentle, occasionally earnest show is well loved by Canadians and Americans living close enough to the border. "A comedy about a mosque in the middle of the prairie being a success?" said Nawaz. "No one saw that coming."

Gustavo Dudamel and Vienna Philharmonic go to a small town in Kentucky. But why?

On Monday, [Gustavo Dudamel](#) will conduct the [Vienna Philharmonic](#) in Danville, Ky., a town of 18,000 right in the middle of thoroughbred country. Earlier in the day, the Venezuelan maestro be given the title of Kentucky Colonel. The story of how this hard-to-imagine event in Bluegrass Country came about is difficult to unravel partly because it's been a long time in the making but also because everyone we interviewed had a rather annoying habit of giving the credit to someone else.

Thirty-seven years ago, [Centre College](#), a private liberal arts college old enough for its name to be spelled the British way, built a top-tier concert hall designed by the Frank Lloyd Wright Foundation -- not to accommodate the school's orchestra (Centre only has 1,250 students) but to create a place where the top acts in all genres could perform for students and the small community.

Classical music aficionado George Foreman was managing director of the college's [Norton Center for the Arts](#) from 1983 to 2009 and under his watch A-list acts became the norm.

“At some point I envisioned a goal of bringing the top five American orchestras to that little town. It seemed like a noble goal. And a crazy goal. We did fairly well at it over the course of the years.”

Fairly well in Centrespeak means the Kirov, Gewandhaus, Royal Philharmonic, Paris, Cleveland, Philadelphia, New York and Israeli orchestras as well as Rudolf Nureyev, Mikhail Baryshnikov, Twyla Tharp, Yo-Yo Ma and Itzhak Perlman. Last Friday Frankie Valli was in town and soon after the Vienna orchestra plays, Smokey Robinson will take the stage.

Foreman had Vienna on his mind for more than 10 years, but it was never the right time.

Then, in 2008, Kentucky was awarded the [2010 Alltech FEI World Equestrian Games](#), the first time the competition has been held outside of Europe.

The title sponsor, local animal health company giant [Alltech](#), decided that there should be a program of entertainment as a nighttime complement to the daily events.

“It’s got to be more than horses,” said Alltech founder and President Pearse Lyons. “The idea was to take that right across the state and we would have the Temptations, the Beach Boys and

Wynonna Judd all the way up to opera. And if we're going to go opera, why not tie with Centre College and so we went out to find the best of the best and then we got to the Vienna Philharmonic."

The center's director of programs and public relations, Debra Hoskins, was consulting for Alltech, so it was up to her to take the next steps.

Hoskins doesn't take no for an answer and after initial inquiries were rebuffed by the Vienna Philharmonic's North American agent CAMI, she turned Google ninja and found contact information for the orchestra's tour manager.

The Vienna Philharmonic didn't return a request for comment but it appears that the engagement was secured on the back of the World Equestrian Games, the college's prior experience with big orchestras and some good old-fashioned greasing of the wheels.

"E-mail is one thing," Hoskins said, "but when they hear an accent from Kentucky, particularly one as thick as mine is, come across the telephone, they were probably thinking 'Lord have mercy. Where are we going to?' I was sending them Kentucky bourbon and chocolates. I just wanted them to know the flavor of Kentucky and the hospitable nature that we have here."

When it came time to choose the conductor, the Vienna orchestra staff suggested Dudamel since he would also be leading the orchestra in their upcoming [Carnegie Hall](#) dates before beginning his second season as music director of the [L.A. Philharmonic](#).

"I had just watched the PBS special on Dudamel and we were so excited that he is coming," Hoskins said.

Securing one of the world's best orchestras and hottest conductors would be enough for most people. By now you should be able to guess where this is going.

"I got the bright idea, you know," she continued. "Dudamel is coming and the VPO is coming, we should have Princess Haya [of Jordan], the president of the [International Equestrian Federation], come to the concert."

Kentucky bourbon was once again called in to service on behalf of its people. "I'll never forget the day I got the Fed-Ex package," Hoskins said. "It was Dec. 14, right near Christmas. I opened it up and I saw her royal seal on the letter saying she'd be so happy to accept our

invitation. I'm surprised you didn't hear me squeal [in Los Angeles] when I got that!"

Class schedules at Centre have been rearranged to allow students to attend the Monday dress rehearsal, and the orchestra's only American member, trombonist Jeremy Wilson from Tennessee, will be giving a master class. To enhance the educational experience even further, a special convocation was held on Thursday night devoted entirely to "Vienna and the Dude." (The poster is pictured above.)

The college is viewing this as a mini-cultural exchange and is determined to show their visitors the best of their state. When they arrive Sunday, Dudamel and the orchestra will be taken to several neighboring horse farms for a Kentucky wine tasting and a full Pride of Kentucky dinner (all products come from the Bluegrass State). Sometime during their visit Vienna and the Dude will be made Kentucky Colonels -- the state's highest honor. Word is a Colonel Sanders impersonator has been engaged.

While people at the Centre were coy about the exact cost of the event, they confirmed that it wouldn't be inaccurate to say that Alltech and the six community sponsors had to come up with a sum somewhere between \$500,000 and \$750,000 -- more than double the normal cost of hosting a big American orchestra.

As is usual at the Norton Center, a good proportion of the students will be involved as ushers, valets and other jobs that are essential for an event to run smoothly. "There's just been so much build-up," says financial economics major and house manager Sahar Haque. "Everyone is on the edge of their seats."

While everyone interviewed at Centre was almost giddy with excitement, there was still a sense of this sort of event being just one more in a long line of successes for a college that consistently punches above its weight. "This is a place of disproportion," said Centre President John Roush. "It tends to do the unexpected with some measure of frequency, so it doesn't seem unexpected."

The nagging question about this was always: Why? Surely students can just watch the DVD like everyone else in small-town America. For Roush and others at Centre, the reason is clear. "When you give a student an opportunity to be around greatness then they can imagine that

they too might be able to do great things. The most important impact is that our people from Centre College believe that anything is possible”

-- Marcia Adair

Jackie Evancho's voice strikes a chord

The 10-year-old wowed the audience on "America's Got Talent" with an impressive opera rendition. But to parlay her voice into a lasting career, she will need the help of a good teacher.

By Marcia Adair, Special to the Los Angeles Times
August 31, 2010

It's been nearly three weeks since 10-year-old Jackie Evancho took the nation's breath away on NBC's "America's Got Talent." Her version of "O Mio Babbino Caro" from Puccini's opera "Gianni Schicchi" brought the house down and assured her a place in Tuesday night's semifinals.

And sure enough, within minutes of her performance, the Internet was alight with people insisting the young girl was lip-synching. The rumor mill was running at such a furious pace that on the next evening's results show judge Howie Mandel asked Evancho to sing a few notes on her own to prove it was really her voice that audiences were hearing.

Adding to the conspiracy theory cause late last week, sister shows "Britain's Got Talent" and "X-Factor" admitted that they use Auto-Tune technology to enhance voices for, they say, the television viewer's entertainment experience. The American arm of the producer, Fremantle Media, says it doesn't use pitch-altering devices for any part of "America's Got Talent" — a moot point in the end since a quick trawl of YouTube for early Evancho performances shows there wouldn't be much need to tune her voice.

"America's Got Talent" vocal coach Yvie Burnett has been working with Evancho since June to make sure she's comfortable on stage. "What strikes me about [Jackie's voice] is that it's not too heavy.

"You sometimes hear young children, and they're trying too hard. With Jackie she just opens her mouth and out it comes."

Her remarkable sense of pitch is one of the many things that makes Evancho's talent so exciting to audiences. While children, or anyone for that matter, can be taught to match pitch, singers

with a natural ability to do so have a huge advantage.

Perhaps a reason some find Evancho's talent so difficult to believe is that audiences are simply unused to this sort of sound from a child. But it's not unheard of: as a young girl, Julie Andrews sang operatic repertoire with a similar sound. That's partly because her teacher was an opera singer but also because that light classical style was popular in the '30s and '40s with the music hall audiences whom her parents were entertaining.

In modern America, most young singing talent tends to imitate pop stars rather than opera singers. YouTube is full of pint-sized belters doing their best to imitate their heroes. (Justin Bieber, anyone?)

The difference between Evancho and fellow Pittsburgher Christina Aguilera is how they produce their sound. A pop voice is "like revving a motorcycle," says Anne Tomlinson, music director of the Los Angeles Children's Chorus. "The sound is produced right on the larynx. In bel canto, which is actually the technique opera singers use, the breath is used to support the voice like water supports a boat."

Evancho's coach may be teaching her the bel canto technique, but calling her an opera singer would be like saying a sixth-grader who is exceptionally good at throwing a football is ready for the Steelers.

There's more to being a quarterback than throwing a 40-yard pass, and similarly, opera takes years of practice on top of the raw talent. A woman training to be an opera singer doesn't develop her voice fully until she is at least in her mid-30s. It takes that long for the voice to completely mature and for a singer to learn how to reliably access the full power and range of color her instrument offers.

"[The voice] needs to be able to function as it is and at the stage of development it's at," says Mike McCarthy. As music director at the National Cathedral in Washington, one of McCarthy's main responsibilities is training the child sopranos to sing in the traditional Anglican men and boys choir. "There is a question of the development of the voice in its more natural form, and by natural I don't mean like an innocent, sort of treble white — I just mean

as it matures, it doesn't try to sound too old, doesn't try to imitate the sound of an older singer."

It is on this point that people who have a lot of experience with children's voices start to worry about Evancho. A person gets only one voice, and if it is improperly developed, it will become irreparably damaged. Charlotte Church, the Welsh soprano, was enormously popular through her teens singing exactly the same repertoire Evancho favors. Now in her mid-20s, the novelty of her age has worn off and Church's voice is no longer impressive enough to sustain a career.

The difference in Evancho's voice between her YouTube audition video and her first "America's Got Talent" performance is telling. While singing César Franck's "Panis Angelicus" for the audition, Evancho sounds very much like an Anglican cathedral chorister. The sound is pure, the vibrato is natural, her pitch is spot-on, and there is no audible break in her voice. In "O Mio Babbino Caro," her voice is much darker, more grown-up-sounding but also more forced. There is also an audible break in her voice, which makes it sound as if she is not strengthening her vocal cords in all registers equally.

Carol Tingle is a Los Angeles-area voice teacher who has been instructing private students since 1966. "Technically what's she's doing is lowering her larynx to get that opera sound. Singers are incredible imitators of sound. It wouldn't surprise me if she hasn't listened to many opera singers, so what she'd be able to do is adjust the larynx and imitate the sound she is hearing either recording or by her coach."

All children imitate their heroes, whether it's basketball or singing. A good teacher will make sure pupils channel that enthusiasm into finding their own style. In Evancho's case, her teacher has an additional challenge: safeguarding that voice.

Reinventing the book tour – again

September 5th 2009 – Toronto Star

LONDON—Book tours are exhausting – something few Canadians know better than Margaret Atwood. Three years ago, tired of travelling all day and eating out of mini-bars, she unveiled her solution to an age-old problem: a remote signature machine called the LongPen. This autumn, Atwood is revolutionizing the book tour yet again.

On paper, it's an inspired idea: In place of the standard reading and autograph session, Atwood has created an hour-long masque, which employs locally sourced actors, musicians and directors to reduce the tour's carbon footprint. The tour also acts as a fundraiser for various environmental charities.

In practice, it was a rather different story. Using local people meant that Atwood had to relinquish aesthetic control. Last night in London, at St. James's Anglican Church in Piccadilly, the aesthetic was a small-town Baptist church nativity play, circa 1974. Choir robes were replaced with gold lamé headbands, and the earnest, guitar-strumming song leader, who swapped traditional hymns for country-music-inspired choruses, completed the portrait.

Hymns are an important part of Atwood's new novel, *The Year of the Flood*, and there are 14 of them scattered throughout the book. U.S. composer Orville Stoeber, the partner of Atwood's agent, set the text to music for the tour. "I wrote the first song in a day," Stoeber says. "It was really just such a natural thing for me. She wanted some 19th-century Canadian hymns ... but I come from that joyful Baptist sort of place. There was something bringing these tunes to me."

Atwood's instincts were right. Sticking with 19th-century shapes and harmony would have served the texts, based as they are on eco-imagery and devotion to vegetation, much better. Many of our favourite Victorian hymns have ridiculous words, but we love them anyway because of the music.

Most disappointing, however, were the readings. Taken straight out of the book without any

discernable alteration, the text was a bizarre mixture of first- and third-person narrative, with some actors acting just one part and others playing multiple minor characters. If you hadn't read the book before arriving – and that would be everyone who attended, since it isn't released in the U.K. until Monday – it was rather difficult to keep track of what was happening. Once again, it was a great idea that fell down on execution.

Creating a proper script for a book tour is impractical, but a few judicious rewrites would have saved us from 30 minutes of awkward "he said's" and perplexing "shouted Adam's." The strongest parts were the narrator's excerpts. For the most part they were sensibly in the first person and provided real insight into her character and the circumstance in which she found herself.

The major drawback to this style of tour is that it adds even more to an already Olympian task. In what could be the understatement of the century, Atwood says it's "more event-packed, and the time is very full."

Despite the dramatic hodgepodge and happy-clappy music, this touring road show really is an excellent idea.

Just as composers are often not the best interpreters of their own work, authors are not always good at reading aloud. Having a third party interpret the text gives it a whole new dimension and spares the audience a dull reading.

Of course, not all books are suited to this format. According to Atwood, "It's a unique sort of thing, so if you're wondering if I'll do this for each of my other books, the answer is no."

Body Cavities: An Anatomical Risk Assessment

Aviation Security International (trade mag) October 2008

The human body is a marvelous machine. It can stretch and adapt as necessary to accommodate most of the crazy things we can subject it to or insert within it. Prison guards, border patrol officers and those that work with the mentally ill could tell stories for days about all the creative ways people have used their bodies to smuggle contraband.

Of course each person is built a little differently but, according to Gray's Anatomy (the reference book, not the TV show), on average, a person's digestive system, from end to end is between 4.75-8.5m (16-29 feet). 25cms (9.8 inches) is devoted to the oesophagus, 3-7m (10-23 feet) to the small intestines and 1.5m (4.9 feet) to the large intestines and colon. The system gets wider as it progresses, ranging from 2cms (0.8 inches) at the oesophagus to 7.5cm (3 inches) in the colon.

The stomach is an irregular shape, so it is difficult to measure accurately but, as a rough guide, this J-shaped organ is 10cms (4 inches) long on the short side and 25cms (10 inches) long on the outside, or long, edge. Perhaps a more useful measurement from our perspective is the volume. Again, this number can change drastically from person to person but, as a rule of thumb, an adult stomach can hold a "payload" of about 1.5 litres (or 2.6 UK pints).

The entire digestive system is devoted to gathering nutrients from whatever is passing through. As such, the entire alimentary canal secretes water, mucous, acid, enzymes and buffers. The intestines are absorption machines designed especially to recover anything the body can use. There is considerable anecdotal evidence to suggest that the human body can accommodate far more than what is consumed as average intake. For instance, anyone who has been down to the pub with the guys can cite examples of over 10 pints (5.6 litres) being consumed before urination empties the system.

Mental patients are notorious swallows and many psychiatric institutions of a certain age, particularly in small towns, have collections of items patients have swallowed in their museums. For example, the Glore Psychiatric Museum in St Joseph, Missouri, USA has on display 1,446 items swallowed by a single patient including 453 nails, 42 screws, safety pins, spoon tops, and

salt and pepper shaker tops. Surgery was required to remove the items but the patient died on the table due to excessive bleeding.

At the same museum, there is a documented case of a patient swallowing a Timex watch. When she excreted it, the watch was still going, giving new meaning to the company's slogan "Takes a licking and keeps on ticking." Meanwhile, a nurse from Portland, Oregon reported a patient who had swallowed 73 pickled pig feet. In addition to these extreme incidents, there is a whole other category of people who swallow for a living. Sword swallows regularly ingest swords of over 60cms (24 inches) and have been known to swallow 34 at one time. Sword swallowing is simply a matter of learning to control your gag reflex and then sliding objects straight down the throat to the stomach. Many magicians are also proficient at swallowing and regurgitating on demand...as are professional smugglers.

The International Drug Swallows Conference website reported that the average drug mule has 1 kg (2.2 pounds) of contraband inside of them wrapped in the fingers of latex gloves. In recent years, however, the smugglers have become even more creative and have surgically inserted heroin into the buttocks or breasts of couriers.

X-ray technology is fast becoming the weapon of choice for customs officers who deal with smuggling on a regular basis. Already in use in all UK airports and several Middle Eastern and Southeast Asian countries, these scanners make objects concealed beneath clothing visible without compromising the subject's dignity.

Jan Steven van Wingerden, CEO of ODSecurity, is a manufacturer of one such system, and explains that, "if you are carrying something on your back or under your clothes or in body cavities or even swallowed you will see it, as long as it is bigger than 1.2mm [0.05inches]. If it is wood or plastic or metal or organic or liquid, as long as it doesn't belong to the human body you would recognise it."

To complete a scan, the passenger stands on a platform while the scanner moves from one side to the other to take a total scan of the body. The image appears on the screen at the workstation where the technician can analyse it for any potential threat. This process takes about 10 seconds to complete.

As great as it sounds, the scanner doesn't solve every security problem. It is merely a detection device. "For example", says Wingerden, "you will not know whether the object is a credit card or a plastic bomb, only that there is something there that shouldn't be there. You have to take it away from the body to actually see what it is."

Indeed, these machines are only as good as the security officers who analyse travellers' behaviour for suspicious activity. Not every passenger is scanned, mostly because it is impractical but also because it is regarded as unethical to subject someone to radiation when there is no specific cause for concern. As such, X-ray machines are used as a secondary line of defence to confirm the suspicions of officers trained in behaviour analysis.

U.S Customs and Border Patrol (CBP) Executive Director for Admissibility and Passenger Programs, Paul M. Morris says that, "[Although] we cannot comment on the specifics of behavioural analysis employed by CBP Officers, but we can state that we rely heavily on the training and expertise of our officers to accurately and quickly identify subjects of interest and refer them for additional interview."

All other border agencies contacted had a similar response but it is still possible, using common sense and some reading between the lines to come up with a list of things agents would look for when trying to spot. Most of these are to do with drug smuggling, but a similar set of criteria would apply to other types of swallows.

It is easy to see why the machines are so popular in the places where they have been installed. Certainly life without cavity searches is better for all involved, not only to help retain everyone's dignity but because there is a large amount of the digestive system that cannot be checked in this manner.

Problems

America has not yet embraced the technology and the Department of Homeland Security says, "there are no current plans to use such a technology" however it "may consider similar technologies in the future."

At the moment, there are two major barriers to such scanners becoming standard equipment in Western airports: perceived health concerns and issues surrounding civil liberties violations. In countries where there is less emphasis on individual rights, the machines are already very popular. In terms of radiation, the X-ray scanners emit levels that are practically negligible.

According to a table on the OD Security website, a single scan from their machines is equal to a half-day in the sun, or more interestingly, less than 45 minutes on an airplane travelling at 39,000 feet. To compare this with common medical X-rays, this scanner emits 0.35% the level of radiation of a regular abdominal X-ray. Despite the low levels of radiation, health ministries are reluctant to issue licenses for the X-ray machines to be used outside of a hospital environment, particularly if local regulations stipulate that X-rays are for medical use only.

Civil liberty violation issues centre on the potential for misuse of the technology rather than the actual process.

Jay Stanley, privacy expert for the American Civil Liberties Union and Public Education Director of their Technology and Liberty Programs stated that, “if it’s an alternative to a legally justified strip search, I’m sure many people would find it less intrusive, however it’s not something that should be applied routinely to every air traveller.”

At the moment X-ray scans are used only after security personnel have determined through behavioural analysis that a passenger may be carrying contraband.

There are some countries that have tried to come up with ways to disguise the scanner so passengers wouldn’t be aware of what was happening. Wingerden shared one instance where enquiries were made about modifying the equipment to look like a palm tree for precisely that purpose. Needless to say, this sort of approach would not be “kosher” in the West!

According to Stanley, the Transportation Security Administration in America is currently testing this technology for possible use on domestic flights. This presents a whole new can of worms with regards to civil liberties.

Currently American border patrol agents are free to search passengers at will without the need for a warrant as guaranteed to citizens by the Fourth Amendment. In a domestic situation, it is

not clear that these concessions would exist. Stanley says, “Some people certainly don’t care [about getting scanned] but some feel like [it is] very intrusive. You just have to ask how long it will be before these pictures start showing up on the Internet.”

Assessing the Terrorist Threat

It goes without saying that there is increasing interest in using X-ray technology to combat terrorism, however this is an area far more problematic than smuggling for a number of reasons. The over-riding problem is one of practicality both on the side of the terrorists and for those responsible for border patrol.

In countries where scanners are being used, the equipment is installed to catch smugglers as they come into the country. It is the customs authorities who are using the technology, not the airport security agencies.

While this is entirely logical for smuggling purposes, it doesn’t make much sense in terms of preventing suicide bombing because the rogue passenger will have completed his mission before arriving at the destination. So, the customer is different.

There are also logistical problems for the terrorist as well. Mainly, how to pack enough explosives inside a person to do damage to an aircraft in flight?

Liquid explosives are problematic because it would be very difficult to mix the ingredients required for detonation in the stomach without the passenger dying. It would be possible to swallow a condom full of one component and then swallow the other whilst on the plane but, if the liquid is strong enough to break through the latex, it’s probably going to eat through the stomach as well, possibly at the wrong time before the aircraft is airborne and causing agonising pain in the process; something that even suicide bombers would wish to avoid.

Other explosives could be swallowed but then there is problem of detonation. Devices that rely on vibrations can be set off accidentally if the passenger gets jostled somewhere. Those that need a detonator can be set off by mp3 player or another remote device but the stomach is a moist environment, making it difficult for a spark to happen. Also, if the explosive is packed in a condom (as it most likely would be) there is no air inside to make a spark either.

Some people have put forward concerns about bioterrorism agents being smuggled across borders as well. This may well happen but it is really an unnecessary risk. Common bioterrorism agents like anthrax or ricin are readily available or can be manufactured fairly easily. Having someone ingest some seems pointless.

In short, anything is possible but considering the volume of air passengers, civil rights concerns and the funding available for new equipment and staff, national border agencies have to concern themselves with what is probable.

Perhaps the greatest concern is that a terrorist might use their body as a way of concealing component parts of a device as they pass through the airport security system. This might apply to components that would otherwise cause an alarm by traditional screening technologies such as metal detectors.

With this in mind, anal, vaginal and even oral insertions remain options for the determined individual...and terrorists do tend to be determined. Sam Stabile, deputy chief inspector for John F. Kennedy Airport in New York told a Houston Chronicle reporter that, “our most powerful screening tools are not X-rays or body scans but the instincts of our inspectors. A lot of what we do involves observing behaviour, recognizing discrepancies in reasons for travel, and the like. We acquired this expertise before 9/11 in our fight against narcotics, and now we are applying it to terrorism.”

It seems that in light of the uncertainty inherent in a terrorist attack and the creativity displayed by smugglers, the eagle eyes and ears of airport security staff are the most reliable and efficient way to protect a country's borders. Technologies, such as X-ray helps, but they don't replace the knowledge and experience acquired from years on the job.