Airport Body Scanners

An introduction to the use of Body Scanners, the science behind the technology, and the ethical implications of these devices.

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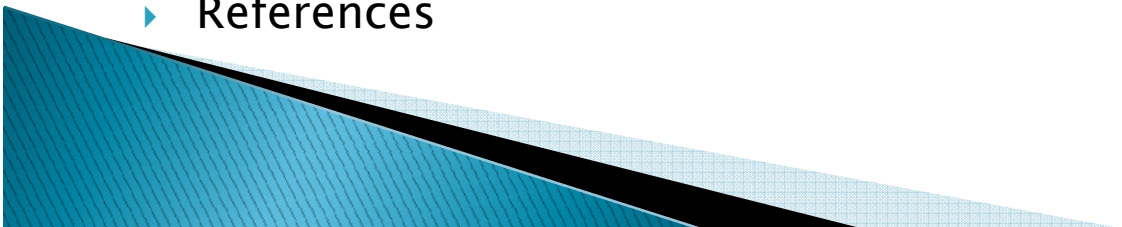June 2nd, 2010
Presentation for CS 305

Warning!!

- This will be an informative presentation, with my opinion included. This presentation hopes to give you the facts, a personal perspective, and give you something to think about. Warning! You may leave this presentation with some new thoughts and opinions different from the ones you have now. Do not be afraid to change your mind, it's a sign of intelligence!

Outline of Presenation

- What are Body Scanners and where are they?
  - Advanced Imaging Technology
    - Backscatter
    - Millimeter Wave
    - What do they see?
  - Airports with Imaging Technology
    - 24 currently and more be added.
- The science behind them… are they safe?
  - Approved and Evaluated by FDA, NIST, JHU APL
- Privacy Issues
  - Passenger Privacy
    - Storage of Images
    - Who is looking at my photo?
    - Do they know its me?
    - What is expected of the staff viewing the photos?
  - What to Expect when you are scanned
- My Opinion
  - My personal opinion, and a ethical analysis using Rule Utilitarianism
- Conclusion
- References

What are Body Scanners?

➢Body Scanners are advanced Imaging Technology for the purposes of detecting metallic and nonmetallic items on Airplane Passengers without bodily contact.

➢Body Scanners use low level X-ray beams to create an image (in Backscatter Imaging) or bounce electromagnetic waves to create an image(in Millimeter Wave Technology)
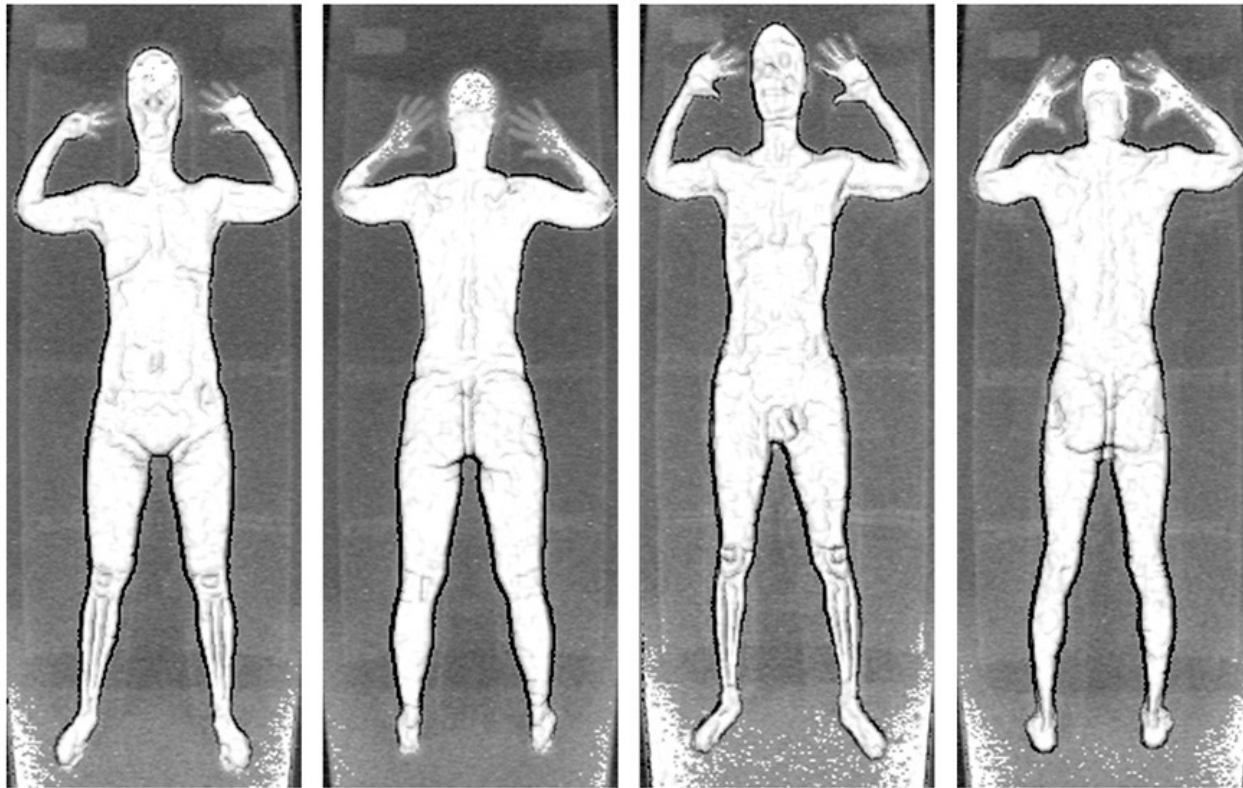

Imaging Booth Backscatter
Picture Source: www.tsa.gov

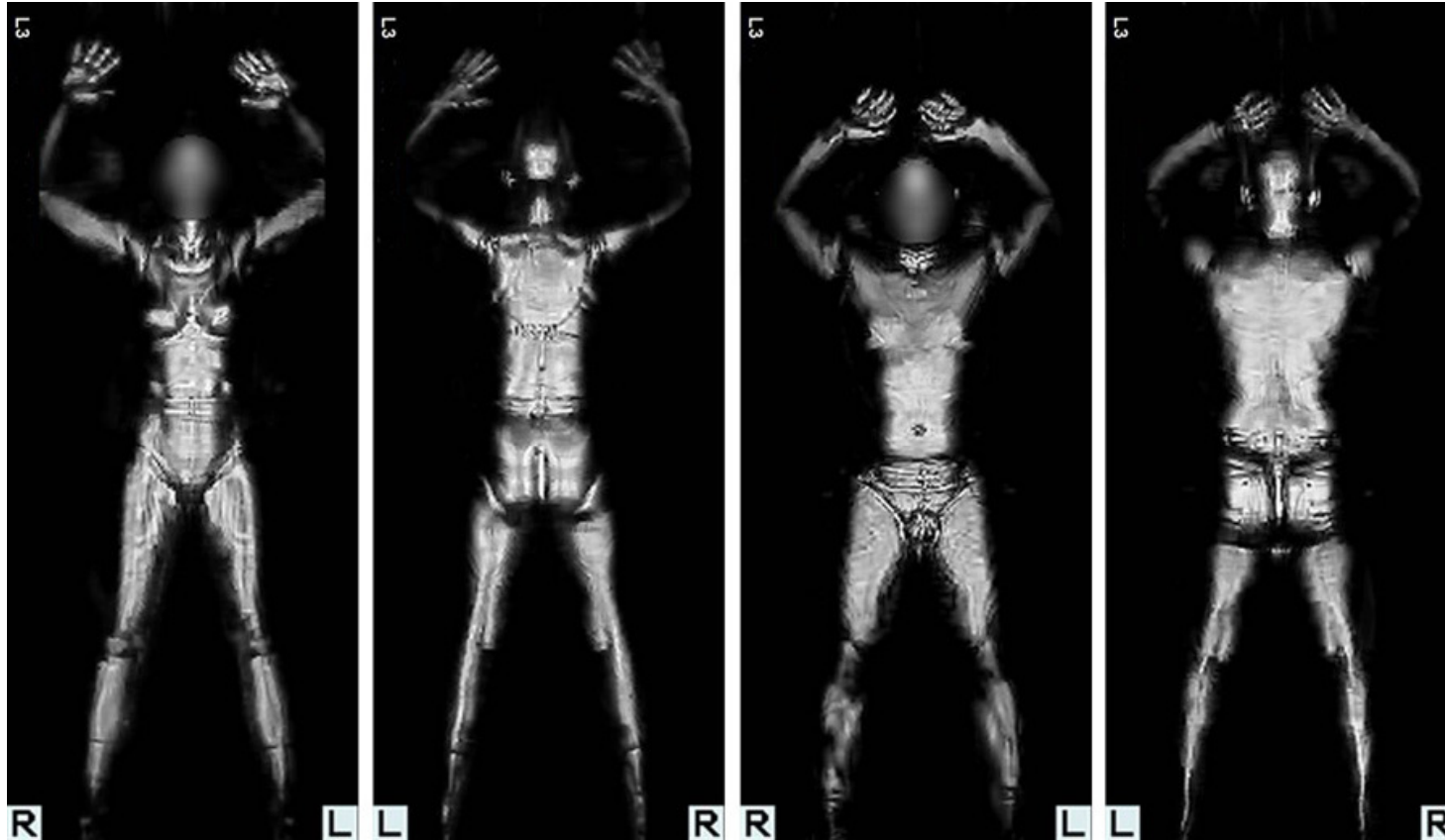Imaging Booth Millimeter
Picture Source: www.tsa.org

What do the images look like?

Backscatter Image with Blurred face and body
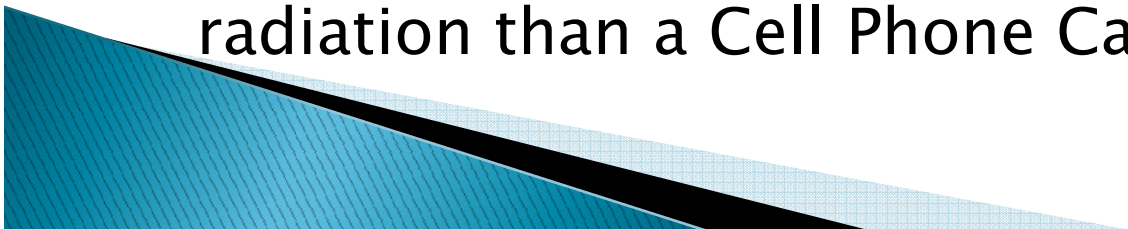
Photo Source: www.tsa.org

What do the images look like?

Millimeter Scanner Image with Face Blurred
Photo Source: www.tsa.gov

If you have ever image searched Google with safe search off, you have seen far worse. Are we really this modest?

Where are they and are they safe?

▸ Body Scanners are currently being utilized in 24 Airports through out the US

▸ 400 units should be in service by the end of 2010

▸ Body Scanners have been deemed safe by the FDA, John Hopkins University Applied Physics Laboratory, and the National Institute of Standards and Technology

▸ Backscatter X-ray expose you to the same amount of radiation you receive by flying in an airplane for 2 minutes.

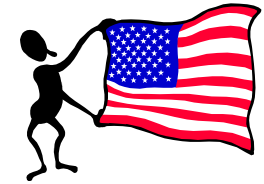▸ Millimeter Wave rays expose you to 1000 times less radiation than a Cell Phone Call.

What to Expect

- To be scanned you will be asked to enter the booth, fully clothed. You will be asked to stand still and turn when asked. Within seconds you are scanned, your picture is viewed, analyzed, and you asked to step out. You are now free to board your flight.
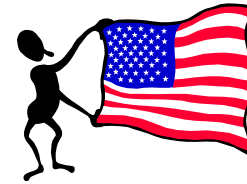- 600 scans can be performed per hour, greatly reducing long-lines and all that extra time needed at the airport!
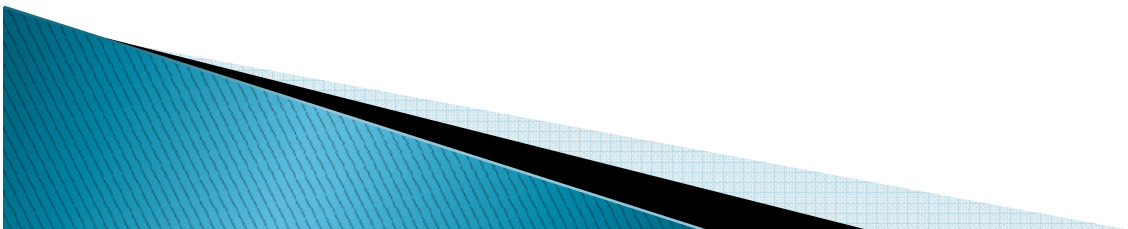
Privacy Issues

▸ Body Scanners eliminate the need for personal bodily contact with a TSA officer.

▸ The officer directing you through the machine can not see you image.

▸ The image is viewed by a trained TSA officer in a remote area of the airport (You can not see the person viewing your image). The room is small and windowless (basically a closet) with only one officer on duty at a time.

▸ The TSA officer viewing the images is not allowed to bring a cell phone, computer, PDA, or any personal items into the viewing room. This officer can only interact with the directing officer via a hands free headset.

Privacy Issues

- The images are either blurred in the face or the entire body is blurred. A Homeland Security report stated that these images can not be used for personal identification.

- Computers that view these images have had there storage capabilities disabled by the manufacture.

- These images are unable to be stored, are immediately deleted, can not be printed, and are not retrievable.

My Opinion

- 9/11 and the Christmas Day Attempted Bombings have shaken the core of feeling safe in the air
- I believe that safety in the air should be a top priority and I am thankful that the TSA is constantly looking for new technologies to keep us safe.
- The TSA was created to "NEVER forget the events of 9/11" and I am thankful for that.
- Less invasive than a pat-down, and quicker.
- Honesty, I do not want to be blown up in a tube 25000 feet in the air, so I am willing to do whatever is needed to prevent that.
- For this presentation also learned the importance of this technology for the disabled.

Ethical Analyzis

- Rule Utilitarianism is the ethical theory that holds that we ought to adopt those moral rules which, if followed by everyone, will lead to the greatest increase in total happiness."

- A rule could be proposed as follows: "Every air traveler will readily agree to reasonable and safe search procedures of their bags and of their persons before ever boarding an aircraft."

- This rule, if followed by everyone, would mean there would be no way for terrorist to bring items on board an aircraft that could harm the fellow passengers, or people below.

- Air travelers because of the increased security would feel safer and in turn happier.

- Because Body Scanners follow the rule of being reasonable and safe, and everyone's happiness would be increased it can be concluded by the Rule utilitarianism ethical framework that Body Scanners should be used by the TSA to scan air travelers.

Conclusion

- In this presentation the facts of Body Scanners have been presented to you.
  - Body Scanners are an advances Imaging Technology designed to detect metallic and nonmetallic threats without bodily contact.
  - Body Scanners are safe and have been evaluated by trusted national agencies.
  - Images are not stored.
  - Images are not viewed by the TSA employee assisting you in the Imaging Booth.
  - Images are blurred and technicians follow strict policy guidelines.
- In this presentation, I have given you my personal Opinion and an ethical analysis of Airport Body Scanners using the Rule Utilitarianism Ethical Framework.
  - This "rule" if followed by everyone will lead to increased good, safety, and happiness in our society.
- This presentation has given you facts, and opinions. Now it is up to you, with the FACTS (we are Computer *Scientists)* , to form your own opinion.

References

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