CyberTruck Challenge

Connecting next generation talent with the heavy duty industry to keep vehicles secure.
What is the CyberTruck Challenge?

- A hands-on learning and active “hacking” event focused on trucks (Class 7 & 8) and potentially some provided military vehicles.
- An event where cohorts of about 18 people with different and supporting backgrounds join with some of the world’s best cybersecurity trainers and experts to learn core cybersecurity skills and then practice them on a modern truck.
- Excellent opportunities to work alongside and network among: OEM engineers, supplier engineers, government engineers, hackers, college students, corporate cybersecurity engineers.
- Free (hotels, food, and transportation provided) to accepted students.
CyberTruck Challenge Mission

- Help **develop the next generation workforce** by bringing awareness, excitement, professional involvement, and practicum based training to the heavy vehicle cyber domain.

- Help **establish community of interest for heavy vehicle cyber** that transcends individual companies or departments and reaches across disciplines and organizations to make a more universal and experienced base of engineers and managers.
Who Attends?

- University Students
- Security Researchers (Ethical Hackers)
- Government
  - Dept. of Defense
  - Dept. of Transportation
  - Others
- Industry
  - OEMs
  - Suppliers
  - Fleets
  - Technicians

2017 Participant Composition

- Government 32%
- University Students 35%
- Industry 18%
- Researchers 15%
- Others

Rarely do these groups get a chance to meet, learn and do research together.
Inaugural Participation

Students were from the following schools:

- The University of Tulsa
- Penn State University
- Colorado State University
- Virginia Tech
- US Military Academy at West Point
- University of Michigan – Dearborn
- Ohio State University
- Eastern Michigan
- University of Cincinnati
- Walsh College
## What to the Participants Do (2017 Schedule)?

<table>
<thead>
<tr>
<th>Time</th>
<th>26 June</th>
<th>27 June</th>
<th>28 June</th>
<th>29 June</th>
<th>30 June</th>
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<tbody>
<tr>
<td>0900-1000</td>
<td>Welcome &amp; NDA Review</td>
<td>Software Reverse Engineering</td>
<td>Heavy Vehicle Systems</td>
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<td>Team Brief</td>
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<tr>
<td>1000-1100</td>
<td>Controller Area Networks</td>
<td>Hardware Reverse Engineering</td>
<td>Conn. Sys.</td>
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<td>1100-1200</td>
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<td>Lunch</td>
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<td>1200-1300</td>
<td>Lunch</td>
<td>Lunch</td>
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<td>Release</td>
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<td>1300-1400</td>
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<tr>
<td>1400-1500</td>
<td>Hardware Reverse Engineering</td>
<td>J1939 Intro</td>
<td>Heavy Vehicle Systems</td>
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<td>Assessment</td>
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<td>1500-1600</td>
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<td>Conn. Sys.</td>
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<td>Assessment</td>
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<tr>
<td>1600-1700</td>
<td>J1939 Intro</td>
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<td>1700-1800</td>
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<td>1900-2000</td>
<td>MetaSploit Demo</td>
<td>Free</td>
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<td>2000-2200</td>
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<td>Site Closed</td>
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Instruction and Seminars

Topics related to heavy vehicle protocols, like J1939 and J1708 communications were discussed.

The CyberTruck Challenge was modeled after the successful SAE Battelle Cyber Auto Challenge. There were a few Cyber Auto graduates at the inaugural event.
Mitch, a security researcher, explains key software features for students as they assess the heavy vehicle systems.

Matt acts as a mentor for a Virginia Tech student during the assessment period.
End of Week Presentations

Colorado State University student demonstrating his work at the end of the CyberTruck Challenge.

Big Benefits for All Attendees

- Networking for professionals.
- Students were inspired and learned a lot.
- Suppliers have clearer understanding and new ideas.
- Researchers learned new tricks and honed skills.
- Industry scouted promising talent.
- Manufactures gained unique design feedback.
Student Reactions

“The biggest benefit for me was probably talking with all the professionals in industry. Talking to them about what they did just affirmed that I want to work in the same field.”

-- John Maag, University of Tulsa Electrical Engineering, Class of 2019

“This experience is amazing. I would never get an opportunity to work with an actual vehicle if it wasn’t for the CyberTruck Challenge.”

-- Subhojeet Mukherjee, Ph.D. Candidate in Computer Science, Colorado State University
Outcomes

Has attending made you MORE likely to enter this industry?

- Yes: 89%
- No: 5%
- Maybe: 6%
- No Response: 0%

Have you found a mentor?

- Yes: 87%
- No: 0%
- Maybe: 0%
- No Response: 13%
Why the CyberTruck Challenge?

- The transportation industry faces cybersecurity threats
  - Ransomware is real – What’s next?
- We have a shortage of cybersecurity talent – especially in heavy duty.
- The industry needs a forum/mechanism for creative discovery of cyber attack surfaces to be used in design processes.
- To help understand risks associated with the promising benefits of advanced technologies, like telematics, platooning, and remote over-the-air (OTA) updates.
Protections and Confidentiality

- The CyberTruck Challenge is pro-Industry
- All participants sign a Non-disclosure agreement
  - Protect Brands
- Sponsors can withhold their logo.
- Industry sponsors can redact photos and content.
- In 2018 we will not allow media on premise.
- All notes and work product are destroyed on the last day.
- Computers are reformatted.
- No social media during the event.
- No phone or photos (other than the designated camera)
Save the Date: 2nd Annual Cyber Truck Challenge
June 11-15, 2018 in Warren, MI
Contact and Information

CyberTruck Challenge is now a Michigan registered non-profit.

Stay tuned to www.cybertruckchallenge.org for more information.

Contacts:
Karl Heimer
+1.248.270.0117
karl.heimer@outlook.com

Jeremy Daily
+1.937.238.4907
jeremy-daily@utulsa.edu