

4/21

SRO

Deputy

## Police Speed Technology - Cannon

Two Speed devices:

1. LIDAR / LASER - Newer (~10 years)
2. RADAR

### LIDAR

- Sends out a narrow light beam - a Laser
- Very targeted - can pick out cars in traffic
- Speed-of-light fast: In ~~one~~ one second it makes 300 measurements!
- LIDAR = "Light Detection and Ranging"
- Effective up to 1 mile away

LIDAR Measures:

- Speed of vehicles
- Distance between vehicles
- Time between vehicles

LIDAR catches ~~is~~ both speeders and tail-gaters.

Tail-gating is being less than 2 seconds behind another car.

3 seconds behind is safer

Law enforcement uses the "Two-Second Rule"

\* less than 2 seconds can get you a big traffic ticket - \$200!

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DBC = Distance Between Cars  
(or tail-gating)

\* Why is this important? Following too close causes 66% of accidents!

\* Why is there a Two-Second Rule?  
"OODA Loop"

O - Observe

O - Orientate

D - Decide

A - Act

> takes 0.75 sec

Perception  
Delay

> takes 0.75 sec

Reaction  
Time

OODA takes 1.5 sec

rounding 1.5 up = 2 seconds (it's safer)

Drivers need 2 seconds to react safely

\* In 2 seconds, how far does a car travel? It depends on speed!

We can figure it out using math:

use 1.467 to convert MPH to feet/sec.

example: What's the OODA distance when driving at 25 MPH?

$25 \text{ MPH} \times 1.467 = 37 \text{ feet in one second}$

$37 \times 2 = 74 \text{ feet in 2 seconds}$

... a formula makes this easier

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## \* Perception / Reaction "OODA" Distance \*

Formula:

$$d = S \times 1.467 \times t$$

d = distance (feet)

S = speed (MPH)

t = time (sec)

Example: What's the OODA distance when traveling 75 MPH?

$$d = \underset{\text{MPH}}{75} \times 1.467 \times \underset{\text{seconds}}{2}$$

d = 220 feet OODA distance

\* RADAR works in any weather, like snow or fog

RADAR has a wider beam, and using it is harder to catch specific vehicles in traffic

\* LIDAR uses light and so it needs clear air (good weather) to work

## ➔ Deputy Advice for a Career in Law Enforcement

- Do well in English classes. Officers read and write a lot
- Take Speech and Debate classes. Officers need good communicating skills
- Get good grades & stay out of trouble
- College degree a plus

@14 y.o. → Participate in Explorers - Sheriff's office  
↳ Deputy Thomas Stuckenschneider