

Extending Naturalistic Driving Research to the Patrol Car

A Pilot Project

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Objective

- Investigate officer driving behavior during patrol through naturalistic observation

Related Research

Simulation (Garrison et al. 2012):

- Impact of dispatch communication on law enforcement patrol situations – National Institute of Justice
- Observed patrol performance of an officer in a simulated and controlled environment
- Varied dispatch format and information availability -- evaluated memory for details

Real-world comparisons:

- What *really* happens in a patrol vehicle, day to day?

Shift Details

- Observation of one month patrol – 12-hour shifts (1400-0200)

Process



Task	Frequency	Time Spent	% Time
Speed check w/ Radar	24.3%	1:04:26	53.0%
Radio Communication	11.2%	0:18:09	14.9%
Interaction w/ Console	7.7%	0:04:35	3.8%
Other Equipment	4.2%	0:02:34	2.1%
Drinking a Beverage	2.9%	0:02:40	2.2%
Cellphone	1.8%	0:03:13	2.7%
Seat belt	0.7%	0:00:17	0.2%
Smoking a Cigarette	35.3%	0:19:09	15.8%
Grooming	6.6%	0:02:26	2.0%
Other Tasks	5.2%	0:03:16	2.7%
TOTAL	100%	02:02:00	100%

Results

- Proportion time spent multitasking : **46%**

Implications

- Law enforcement patrol demands substantial attention across multiple tasks
- Because multitasking is critical for performance, technology should support performance and mitigate distraction
- Not all distractions result from technology – more difficult to limit officer engagement
 - Mindset – ‘Mobile Office’
 - Break from the monotony, stress of the job demands
- Comparison (RCMP Survey): 39% driving time spent interacting with equipment (MDT)



References

- Garrison, T. M. et al. (2012). Sources of Cognitive Load in a Simulated Law Enforcement Patrol Task. *4th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*. Portsmouth, NH.
- Plecas, D. et al. (2011). An Analysis of Police Officer Vehicle Time: The case of Surrey RCMP Officers. University of the Fraser Valley