Fatigue, frustration, and the pursuit of happiness

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ABOUT @CELESTELYNPAUL

Senior researcher and technical advisor at NSA Research
PhD Human-Centered Computing
Hackers are people too
Cybersecurity job fatigue affects many security professionals

Infosec professionals face occupational hazards such as long hours, high stress levels, and career frustration that can lead to mental health issues.

Government CIO

NSA Cybersecurity Operators Fight Through Stress for National Security, But at What Cost?

Fatigue and frustration magnify the strain.

Amanda Zadeh
Fri, 08/10/2018 - 08:32

Forbes

Cybersecurity Mental Health Warning -- 1 In 6 CISOs Now Medicate Or Use Alcohol

by Martin Giles  August 7, 2018

by Eva Short  7 Nov 2018  1.4K views

David Winder  Contributor  Cybersecurity  I report and analyse breaking cybersecurity and privacy stories
WHAT IS STRESS?

Stress is a **physical** and **emotional** reaction to adverse events.

- **ACUTE**  Temporary ‘fight or flight’ response
- **EPISODIC**  Repetitive stress with little time to recover
- **CHRONIC**  Enduring situations with no sense of control
WHAT IS STRESS?

Stress is a physical and emotional reaction to adverse events.

ACUTE Temporary ‘fight or flight’ response

EPISODIC Repetitive stress with little time to recover

CHRONIC Enduring situations with no sense of control

BURNOUT
WORK-RELATED STRESS

Demanding job with *little control*. Effort/reward *imbalance.*
STRESS AND WORK

FATIGUE  Physical and mental feelings of tiredness
FRUSTRATION  Anxiety and annoyance over lack of control
COGNITIVE WORK  Mental effort needed to use memory
WHY IS HACKING SO STRESSFUL?

- Complex problems
- Unpredictable environment
- High risk/high reward operations
STRESS & HACKING @NSA

- 4 NSA locations
- 126 tactical operators
- 361 operations
- CIV and MIL operators
- Average op length ~5 hours
Cyber Operations Stress Survey
PRE-OP: Complete this part before you start the operation

Name or Participant ID:  
Date:  
What time did you arrive at the office today?  
When was your last operation?

Operation type or goal:

Study-specific questions can be added as needed...

Fatigue: How awake or tired are you before the operation?

Fully alert, wide awake.  
Very responsive, but not at peak.  
Okay, somewhat fresh.  
A little tired, less than fresh.  
Moderately tired, let down.  
Extremely tired, very difficult to concentrate.  
Exhausted, unable to function effectively.

Frustration Level: How insecure, discouraged, irritated, stressed, and annoyed are you right now?

Very Low  
Very High

★ Complete this section only if you have never completed a version of this survey before:

Job Role

How long have you worked in this job?

What are your other work duties or responsibilities?

Operation start time:

Complete the back page after the operation is complete →

Cyber Operations Stress Survey
POST-OP: Complete this part after you complete the operation

Operation end time:

Fatigue: How awake or tired are you after the operation?

Fully alert, wide awake.  
Very responsive, but not at peak.  
Okay, somewhat fresh.  
A little tired, less than fresh.  
Moderately tired, let down.  
Extremely tired, very difficult to concentrate.  
Exhausted, unable to function effectively.

Mental Demand: How mentally demanding was the operation?

Very Low  
Very High

Physical Demand: How physically demanding was the operation?

Very Low  
Very High

Time Demand: How hurried or rushed was the pace of the operation?

Very Low  
Very High

Overall Performance: How successful were you in accomplishing what you were asked to do?

Very Low  
Very High

Frustration Level: How insecure, discouraged, irritated, stressed, and annoyed were you?

Very Low  
Very High

Effort: How hard did you have to work to accomplish your level of performance?

Very Low  
Very High

Team Synergy: How well did your team work together?

Very Low  
Very High

Did you complete your objective?  
☐ Yes  
☐ No

Is there anything else you would like to tell us?


HACKING IS STRESSFUL

HACKING IS STRESSFUL

RTLX = 44.5 (SD = 28.1)


## HACKING IS STRESSFUL

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* p < .001

LOCUS OF CONTROL

The extent to which a person feels that they have control over the outcome of events in their lives.
* Don’t worry, [s/he] was fine once the op started
MASLOW’S HIERARCHY OF NEEDS

- **Physiological**
  - Food, water, shelter, clothing, warmth, sex

- **Safety**
  - Protection, security, health, resources

- **Love and Belonging**
  - Friendship, intimacy, trust, community

- **Esteem**
  - Dignity, freedom, acknowledgement, status

- **Self-Actualization**
  - Personal growth and peak experiences

**Deficiency Needs**

**Growth Needs**
HIERARCHY OF HACKER NEEDS

Self-Actualization
Mission, personal achievement

Esteem
Reputation, recognition, respect

Love and Belonging
Comraderie, teamwork, solidarity

Safety
Authority, policy, support

Physiological
Equipment, tools, access

What we need to be happy
What we need to do our jobs
Stress can’t be eliminated but, it can be managed.
MITIGATING STRESS

PERSONAL

Practice **mindfulness**.

If you’re running hot, **have a spotter**.

Remember that **it will be alright**.

Need to talk to someone? @800273TALK, 1-800-273-TALK (National Suicide Prevention Lifeline)

ORGANIZATIONAL

**Creature comforts** matter.

Keep an eye on **time**.

Remember **who** you hired and **why**.
HAPPY HACKING!

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