



AVIATION SAFETY CAMPAIGN

Human Factors & Safety Awareness



Presented by: Peninah N.N. Ngugi
Argyle Hotel
03 September 2026
Safety Begins With Us

1



2

CASE 1

SUNDANCE HELICOPTERS

Las Vegas, USA – 7 December 2011

Eurocopter AS350-B2



WHAT HAPPENED
The helicopter crashed during cruise due to separation of a critical flight-control component. The aircraft became uncontrollable.

FATIGUE – A CONTRIBUTING FACTOR

Mechanic
The mechanic was likely fatigued. Fatigue degraded performance and contributed to improper securing of the flight-control hardware.

Inspector
The quality-control inspector was also likely fatigued. Fatigue contributed to failure to detect the maintenance errors.

3

CASE 2

BOEING 737 – VH-CZX

Australia – 10 October 2001



WHAT HAPPENED
During maintenance, the spoiler cables were misrouted. The error was not detected during inspection and the aircraft subsequently experienced a flight-control problem.

FATIGUE AND EXCESSIVE HOURS

Maintenance engineers travelled from Brisbane to Sydney and worked more than 24 hours with minimal breaks.

Flowchart:

```

graph LR
    A[> 24 HOURS WORKING] --> B[FATIGUE]
    B --> C[MAINTENANCE ERROR]
    C --> D[INSPECTION ERROR]
    D --> E[FLIGHT CONTROL PROBLEM]
  
```

4

CASE 3

JET2 BOEING 737

Paris Charles de Gaulle, France – 25 August 2011

WHAT HAPPENED

The aircraft experienced a serious landing-related event. Investigation identified fatigue among the contributing human-factor issues.

HOW FATIGUE CONTRIBUTED

- Unexpected additional work created time pressure.
- Maintenance work was performed approximately and things were forgotten.
- Supervisor had worked excessive hours over an extended period, reducing ability to perform checks effectively.

INVESTIGATION FINDINGS

Fatigue was a contributing factor. Time pressure and prolonged working hours reduced effectiveness of oversight and increased risk.

5

So Many Expectations. One Day.

5:00 AM
RISE & PREPARE
Quiet time, prayer, exercise, get ready

7:00 AM
FAMILY CARE
Get the kids ready, breakfast, school run

8:30 AM
WORK MODE
Meetings, deadlines, calls, problem solving

12:30 PM
LUNCH & RESET
A quick break, then back to it

3:00 PM
MORE DEADLINES
Reports, follow ups, decisions, targets

6:00 PM
FAMILY TIME
Homework, play, listen, support

7:30 AM
COMMUTE
Traffic, fuel, mental prep

9:00 AM
LEAD & DELIVER
Team, goals, results, pressure

1:00 PM
DECISIONS
Big calls, real impact

4:00 PM
PROBLEM SOLVER
Unexpected issues, find solutions

7:00 PM
PERSONAL GROWTH
Learn, reflect, improve

9:30 PM
PLAN & PREPARE
Plan tomorrow, never stop

11:00 PM
FINALLY... REST
Recharge, so I can do it all again tomorrow

BE PRESENT
Be there for my family

STAY HEALTHY
Eat well, exercise, rest

KEEP THE HOME
Running smoothly

FINANCES
Budget, bills, plan ahead

BE A GOOD LEADER
Inspire. Guide. Support.

MAKE AN IMPACT
Leave things better

BE STRONG
Even when I'm tired

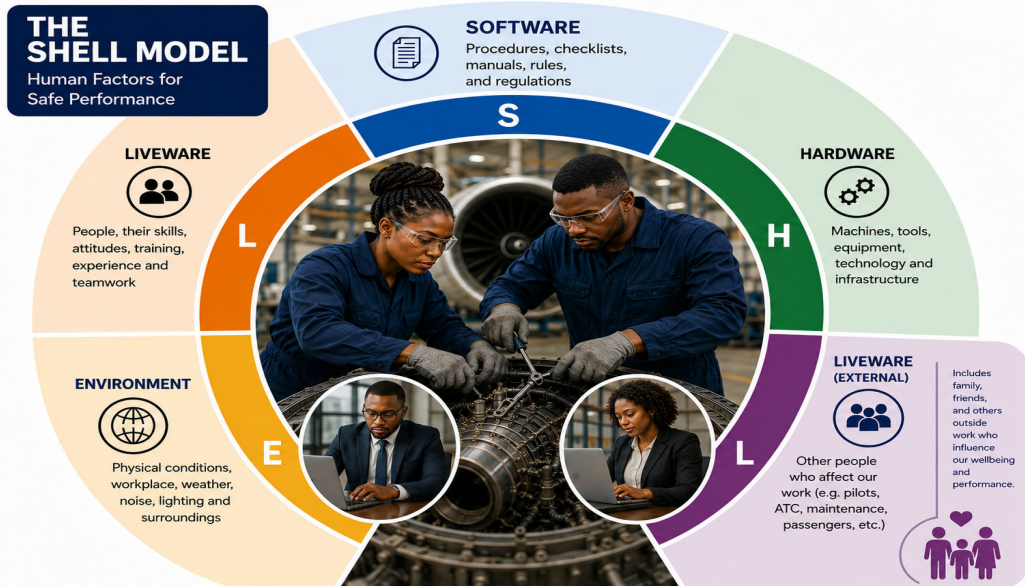
6

Circadian Rhythm



7

Safety begins with the person at the center of the system.



MAINTAIN YOURSELF • Human Factors in Aviation Maintenance

2

8

EARLY SIGNS OF FATIGUE

Spot the signs early. Stay safe. Stay sharp.





RECOGNIZE EARLY. REPORT EARLY.
PREVENT RISK. PROTECT LIVES.



TAKE CARE OF YOURSELF.
YOUR SAFETY MATTERS.

BE ALERT TO THESE SIGNS

- **YAWNING**
Frequent yawning or heavy eyelids
- **DIFFICULTY CONCENTRATING**
Trouble focusing or remembering
- **HEADACHES**
Dull aches or pressure
- **LOW ENERGY**
Feeling unusually tired or drained
- **SLOW REACTION**
Slower responses or poor coordination
- **IRRITABILITY**
Short temper or mood changes

MAINTAIN YOURSELF • Human Factors in Aviation Maintenance

10

9

BEING ACCUSTOMED TO **FATIGUE** DOES NOT MEAN YOU ARE PROTECTED FROM IT

**ACCUSTOMED TO FATIGUE**

- ✗ Still slowed reactions
- ✗ Poor decision-making
- ✗ Memory lapses
- ✗ Higher risk of mistakes

FAMILIAR DOES NOT MEAN SAFE.



**PROTECTED FROM FATIGUE**

- ✓ Alert mind
- ✓ Good decisions
- ✓ Better performance
- ✓ Safer for you and others

MANAGE FATIGUE. PROTECT PERFORMANCE. PROTECT LIVES.



MAINTAIN YOURSELF • Human Factors in Aviation Maintenance

11

10

FATIGUE AFFECTS JUDGEMENT.
Choosing the wrong tool can lead to errors.

FATIGUE REDUCES FOCUS AND JUDGEMENT

Which tool should we use?

WRONG TOOL CHOSEN DUE TO FATIGUE

POTENTIAL CONSEQUENCES

- Damaged parts
- Wasted time
- Increased risk of error or incident
- Compromised safety for you and others

MANAGE FATIGUE. MAKE BETTER CHOICES. WORK SAFELY.

RIGHT TOOL. RIGHT JOB. EVERY TIME.

11

COMMON EXCUSES. DANGEROUS MINDSETS.

- "I'm used to working nights."
- "I'll sleep after the job."
- "It's only one more shift."
- "Coffee will keep me going."
- "Everyone else is managing."

FATIGUE IMPAIRS JUDGMENT. GOOD INTENTIONS DON'T PREVENT MISTAKES. CHOOSE REST. CHOOSE SAFETY.

12



13

Protect Your Recovery

- Protect your sleep time and recovery periods.
- Keep a consistent sleep routine where practical.
- Create a dark, quiet and comfortable sleep environment.
- Limit unnecessary screen use before sleep.
- Do not rely on stimulants to compensate for inadequate sleep.
- Plan recovery after night shifts.
- Speak up when fatigue could affect safety.



14

MAINTAIN YOURSELF

- S** Sleep — protect quality rest
- H** Healthy habits — hydrate, eat and recover
- E** Environment — recognise fatigue contributors
- L** Look after yourself — know your limits
- L** Look after each other — communicate and support



15

QUALITY SLEEP = SAFER MAINTENANCE

- Concentration and attention to detail
- Memory and information processing
- Decision-making and judgement
- Communication and teamwork
- Situational awareness
- Error detection and recovery



16

My Safety Commitment

- I will protect my sleep and recovery.
- I will recognize my fatigue and personal limits.
- I will speak up when I am not fit to perform safely.
- I will not allow pressure to compromise safety.
- I will look out for my colleagues.
- I will treat my wellbeing as part of my professional responsibility.



MAINTAIN YOURSELF • Human Factors in Aviation Maintenance

19

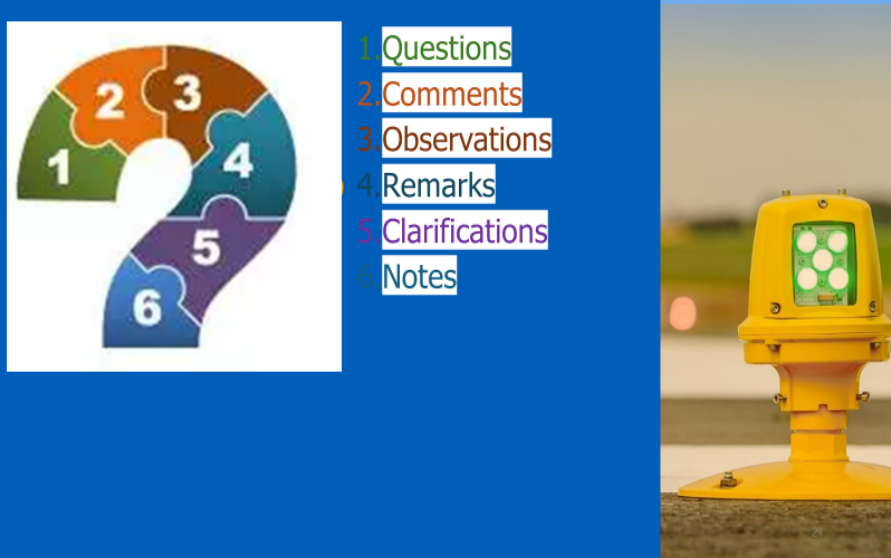
17

RESTED PEOPLE MAKE SAFER DECISIONS

SLEEP • RECOVER • RECOGNISE • REPORT • PROTECT

**Before you maintain the aircraft...
MAINTAIN YOURSELF.**

18



1. Questions
2. Comments
3. Observations
4. Remarks
5. Clarifications
6. Notes

19



ASANTE (KISWAHILI)
SIYABONGA (ISIZULU)
KE A LEBOGA (SETSWANA)
NDI KHOU LIVHUWA (TSHIVENDA)
ENKOSI (ISIXHOSA)
MEDAASE (TWI)
MURAKOZE (KINYARWANDA)
NDAA (WOLOF) MAHADSANID

THANK YOU

20