



P06

My Stress Is Your Pleasure

E365 – Aviation Human Factors

SCHOOL OF
ENGINEERING



- Stress is the process by which we perceive and respond to certain events that we appraise as threatening or challenging.
 - It is not just a stimulus or a response.
- Duration
 - Acute stress - typically intense but of short duration
 - Chronic stress - frequent recurrence or of long duration
- Types
 - Eustress – good
 - Distress – bad



Domestic



Work related



- Stressors
 - Physical
 - Psychological
 - Reactive

Symptoms



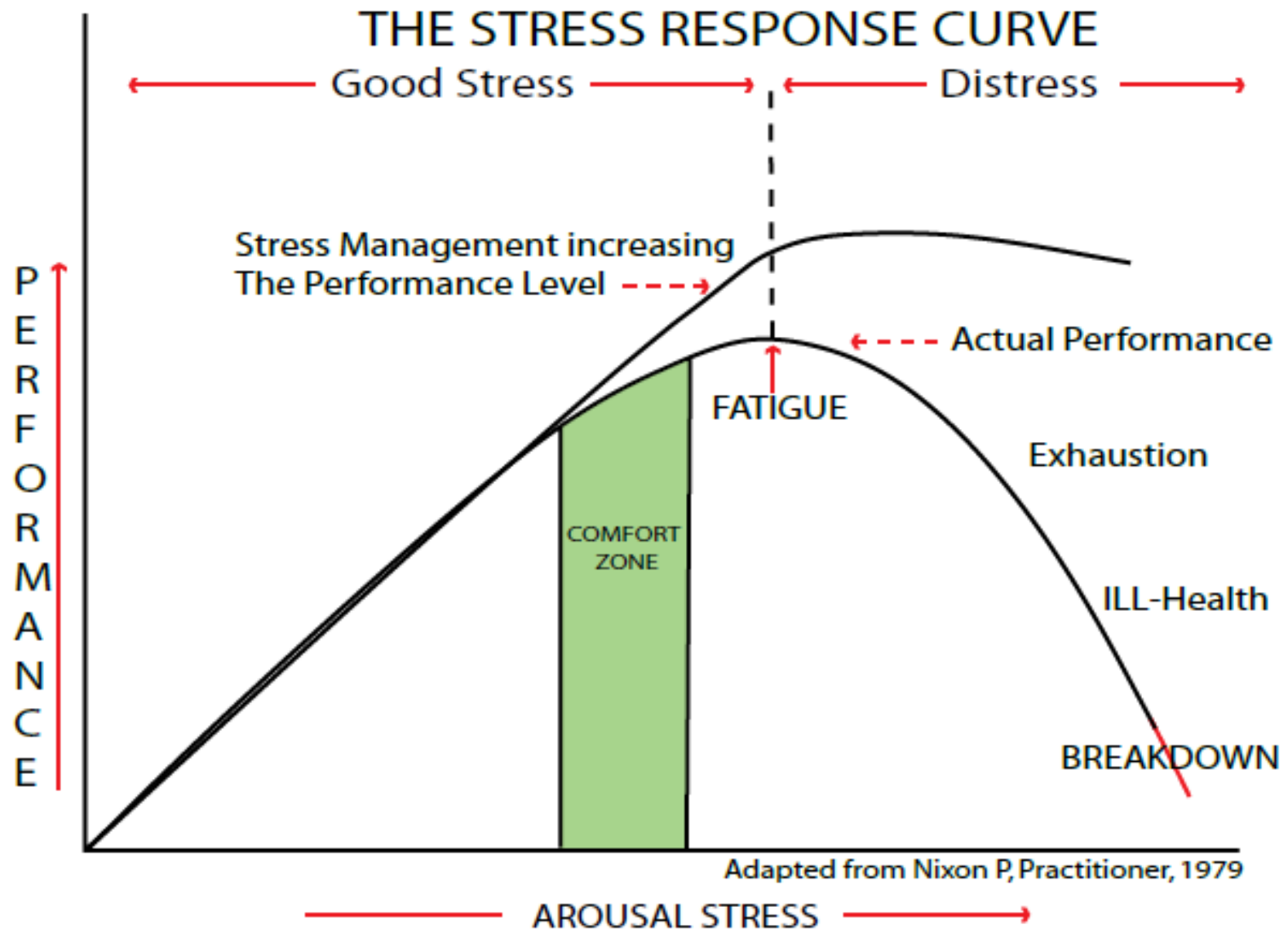
- Physiological symptoms
 - sweating, dryness of the mouth, etc.
- Health effects
 - nausea, headaches, sleep problems, diarrhea, ulcers, etc.
- Behavioural symptoms
 - restlessness, shaking, nervous laughter, taking longer over tasks, changes to appetite, excessive drinking, etc.
- Cognitive effects
 - poor concentration, indecision, forgetfulness, etc.
- Subjective effects
 - anxiety, irritability, depression, moodiness, aggression, etc.

Social Readjustment Rating Scale

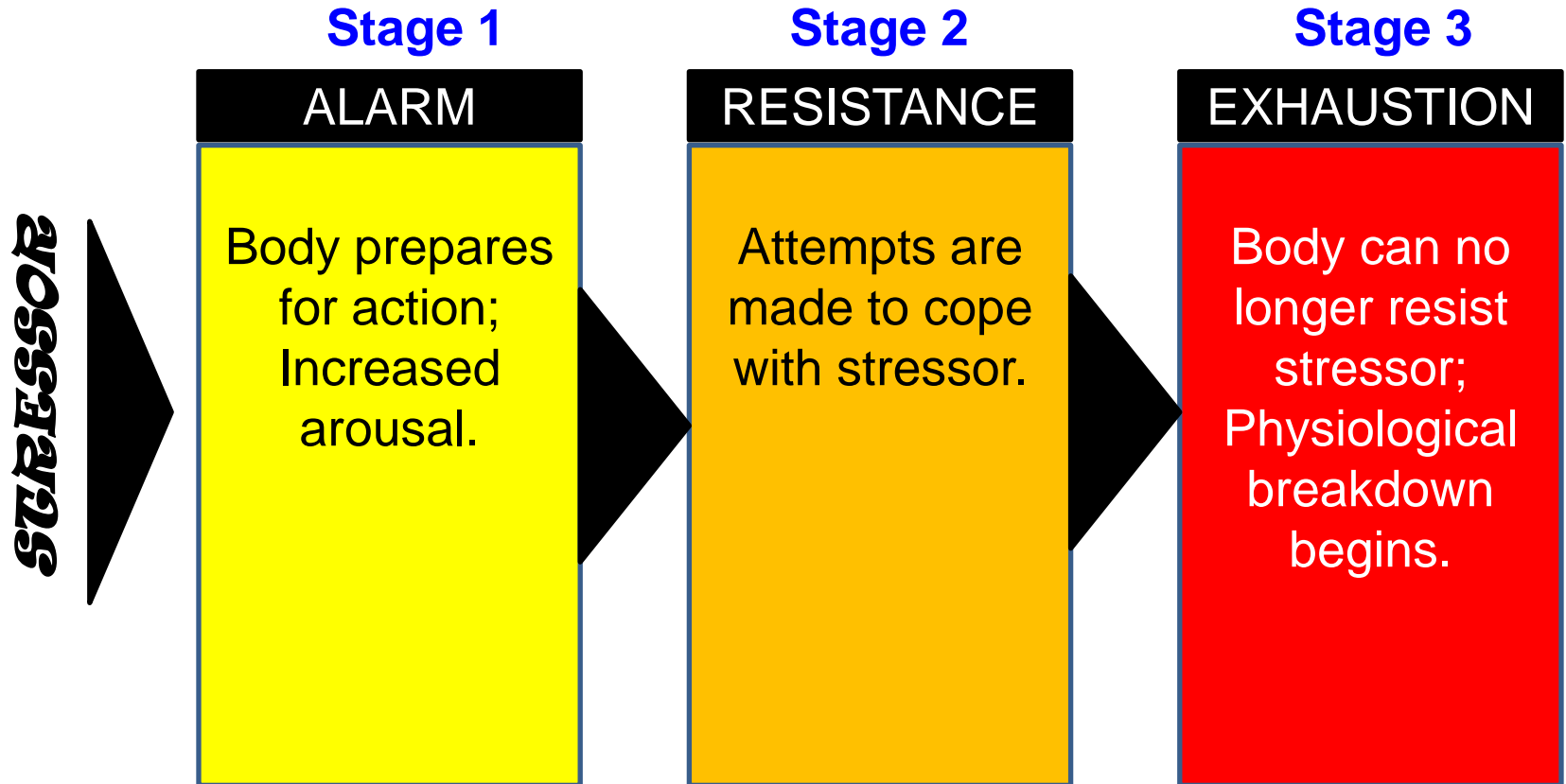


- Important life changes all induce stress
 - Regardless of positive ones, such as marriage or negative ones, such as death of a close friend
- Stress is accumulative
- Interpretation of the overall score is difficult because of the large differences in each person's ability to cope and their particular reactions to stress
 - 150 or less - suggesting a low level of stress in your life and a low probability of developing a stress-related disorder.
 - 150 to 299 - the chances are about 50%. At less than 150, about 30%.
 - 300 or more - statistically you stand an almost 80% chance of getting sick in the near future.

Stress response curve



General Adaptation Syndrome



Stage 1 – Alarm



- Recognition of threat and preparation to deal with it
 - fight or flight response
- Stress hormones are released to provide instant energy
 - If this energy is repeatedly not used by physical activity, it can become harmful.
 - Too much adrenaline results in a surge of blood pressure that can damage blood vessels of the heart and brain.
 - The excess production of the cortisol hormone can cause damage to cells and muscle tissues. Stress related disorders and disease from cortisol include cardiovascular conditions, stroke, gastric ulcers, and high blood sugar levels.

Stage 2 – Resistance



- The body attempts to restore balance and a period of recovery for repair and renewal takes place.
- Stress hormone levels may return to normal but one may have reduced defenses and adaptive energy.
- If a stressful condition persists, the body adapts by a continued effort in the production of stress hormones and remains in a state of arousal.
- Problems begin to manifest when there is little or no recovery.

Stage 3 – Exhaustion



- The stress has continued for some time.
- The body's ability to resist is lost because its adaptation energy supply is gone.
 - Overload, burnout, adrenal fatigue
- The adaptation process is over.
- Most hazardous to one's health.
 - Chronic stress can damage nerve cells in tissues and organs. Particularly vulnerable is the hippocampus section of the brain. Thinking and memory are likely to become impaired, with tendency toward anxiety and depression.

Responses to stress



- Defence
 - Alleviation of the symptoms
 - e.g. taking medication, alcohol, etc.
 - Reducing the anxiety
 - e.g. denying to yourself that there is a problem, or blaming someone else
- Coping
 - the individual either adjusts to the perceived demands of the situation or changes the situation itself.
 - dealing with the source of the stress rather than just the symptoms
 - e.g. delegating workload, prioritising tasks, sorting out the problem, etc.



- Relationship between amount of work and workload is no linear.
- Workload is the degree of stimulation exerted on an individual caused by a task.
 - Physical
 - Mental
- Factors affecting
 - The nature of the task
 - The circumstances under which the task is performed
 - The person and his state
- Overload and underload affect performance adversely.

Learning Objectives



- What is stress?
 - Duration
 - Types
 - Sources
 - Stressors
 - Symptoms
- Social Readjustment Rating Scale
- Stress response curve
- General Adaptation Syndrome
- Responses to stress
- Workload