# COPING WITH OVERLOAD

# BY THE TIME YOU ARE IN OVERLOAD IT IS TOO LATE

# AVOIDING OVERLOAD IS THE ONLY STRATEGY

# GLOC ‘G’ force loss of consciousness

# OLOC OVERLOAD loss of conscious/cognition

# OLOC  Off with the fairies

# TWO FLAVOURS OF OLOC

RAPID OVERLOAD AND SHUTDOWN
GRADUAL OVERLOAD AND SHUTDOWN

# Who thinks that they have suffered OLOC?

# Mental Exercise

Starting with the number 3031, mentally deduct 13 until I tell you to stop.

That  is the rapid onset.

# Let’s try again

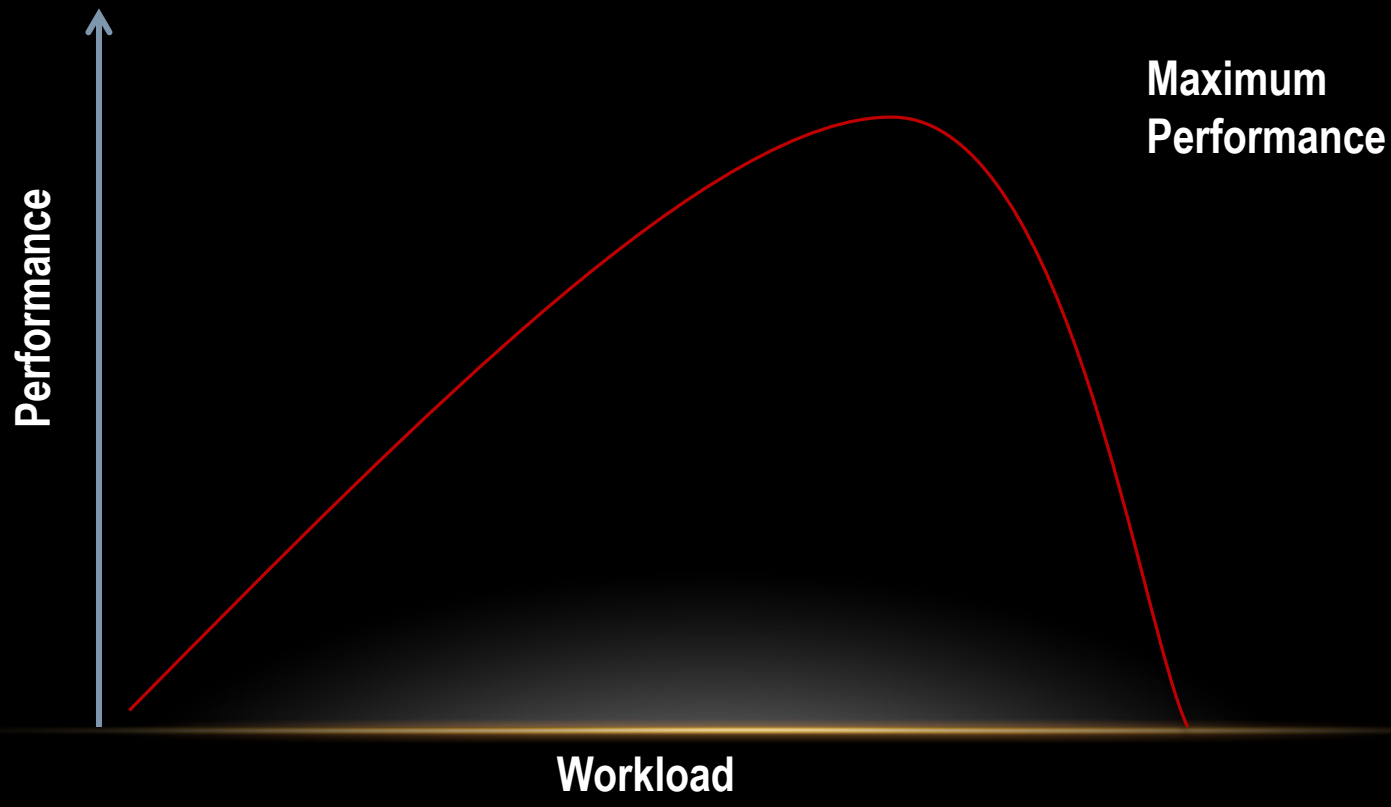
Starting with the number 1111 mentally subtract 13 until I tell you to stop.

That is gradual onset.

# Which one is the most likely?

# WHY DOES THIS HAPPEN?

# WORKLOAD



Rapid onset can cause ‘FIGHT OR FLIGHT’ AND SHUTDOWN.

This is a primitive brain response.

Gradual onset can cause decay in performance and possible shutdown.

# EITHER WAY YOU WILL SUFFER OLOC.

The brain does not give you any feedback about it's state.  You are your brain!  At least most people are!

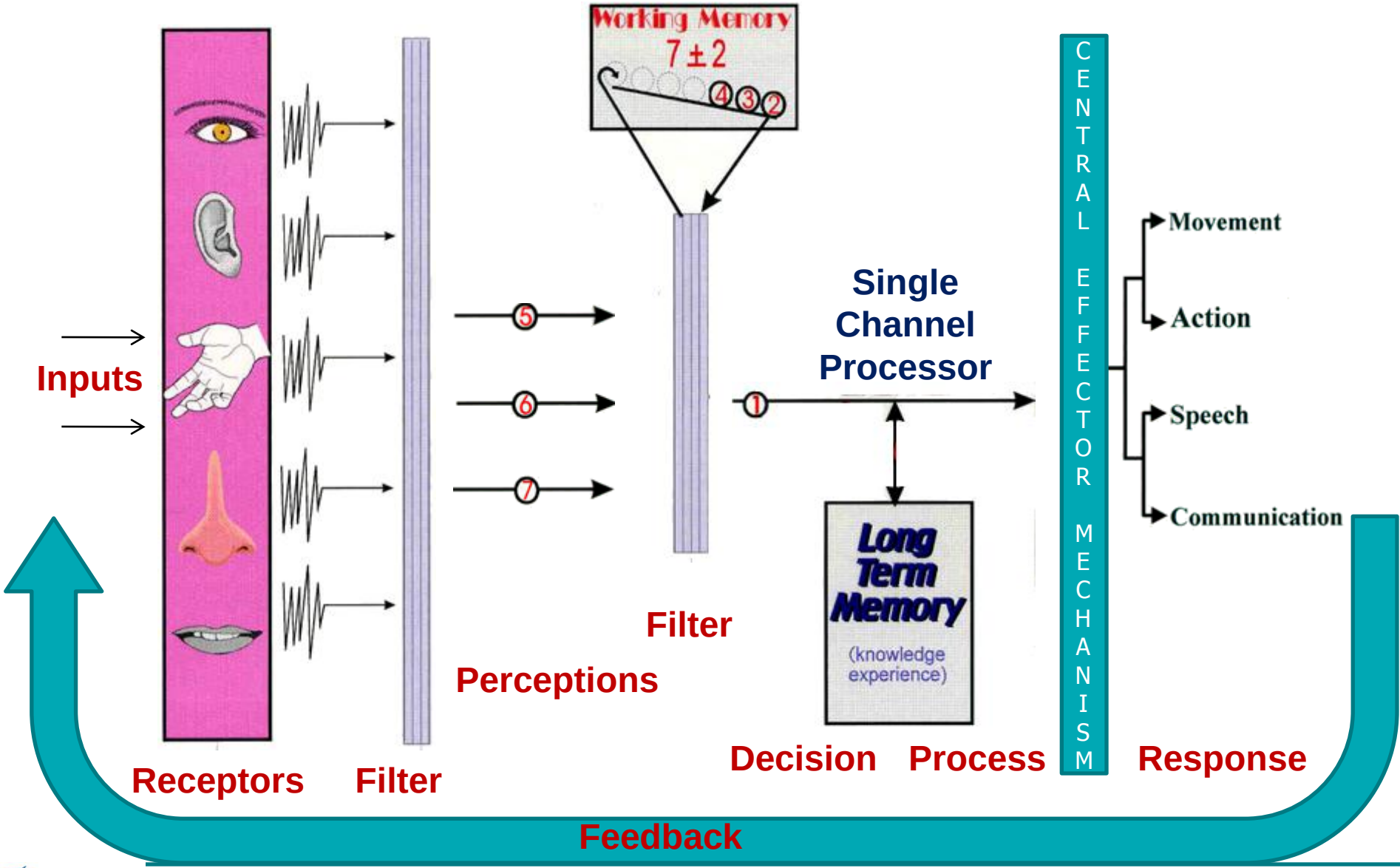
There is a fine line between ‘managing’ and the Primitive Brain taking over.

# HUMAN INFORMATION PROCESSING

Sensory input is combined with information stored in the MEMORY in order to develop MEANING

# The brain must sift information stream for Relevant Cues (SIGNALS) versus Irrelevant Cues (NOISE)

# HUMAN INFORMATION PROCESSING SEQUENCE



BANDWIDTH is the rate of information transmission over a channel.

Bandwidth of the EYE is 1000 bits/second
Bandwidth of the EAR is 10000 bits/ second
Bandwidth of the BRAIN  is lower than the Sensory System

Most sensory information is filtered out to better match the BANDWIDTH of the BRAIN which functions as a LIMITED SINGLE CHANNEL SYSTEM

Highly PROBABLE events convey little information and just confirm what we anticipate.

Highly IMPROBABLE events convey substantial information because they are not anticipated.

# Information load has functional effects on HUMAN PERFORMANCE

# Information load dramatically affects the speed of a response

Information load dramatically affects the accuracy of a response.

# Information load can an WILL freeze processing (OLOC)

There is a fine line between managing a state and the primitive brain taking over.

Most of the 30,000 pilots surveyed report that their decision making is as good in emergencies as under normal conditions, that they can leave behind personal problems, and that they perform effectively when fatigued.  Such inaccurate self perceptions can lead to overconfidence in difficult situations.

Helmreich on error.

# COPING WITH OVERLOAD

# You cannot cope with overload!
# (That's all she wrote)

# You stay away from OLOC

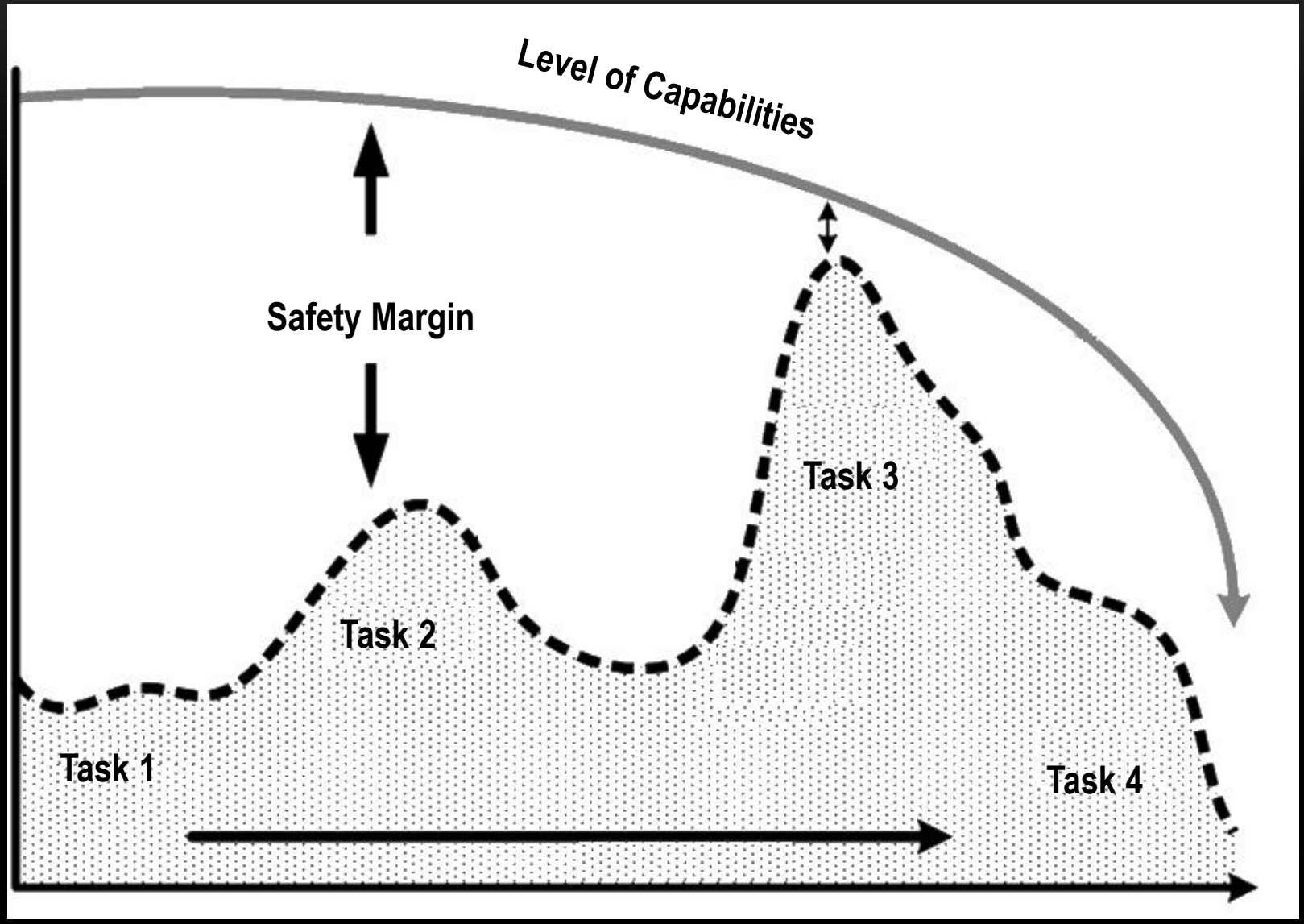
# You must recognise the early warning signs

Confusion
Loss of Situational Awareness
Missing radio calls
Unfinished sentences
Silences when there should not be.
Mood change
No one home (off with the fairies)(again)
Forgetting (not sure what)
etc...

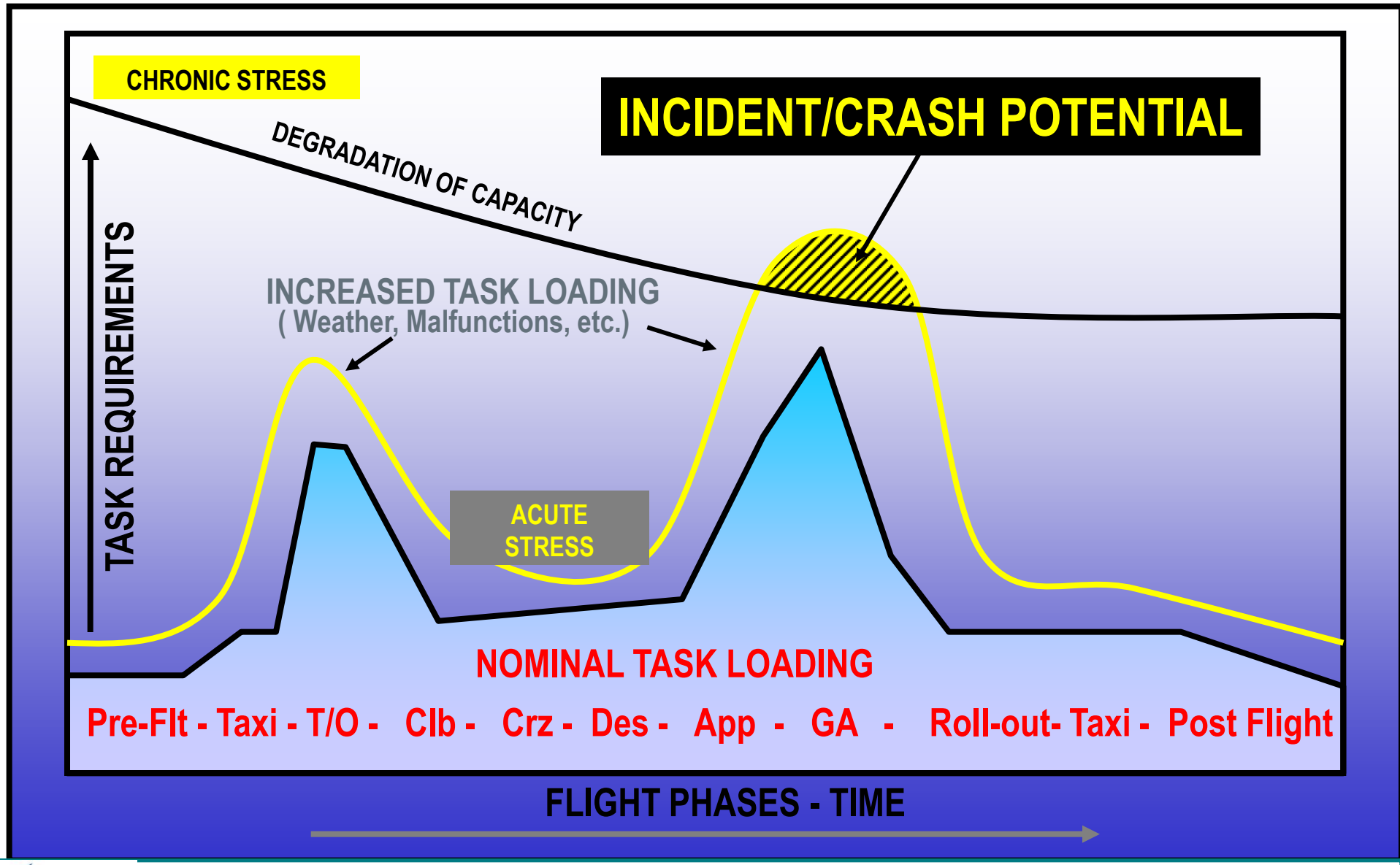
# PREDISPOSITION FOR OLOC

Chronic Stress (personal)
Tired
Fatigued
Duty Time
Weather
MEL's
Diversion/Missed approach
Corporate Pressure
Experience (Expert/Novice)
CRM skills (PNM's)
New on type
Sick Pax
Severe Turbulence
Married

# COGNITIVE OVERLOAD



# COGNITIVE OVERLOAD



# List and discuss threats ahead

# THINK worse case scenario

# PLAN COPING STRATEGY.

Consider carefully your predispositions and forecast/predict possible overload and if you will be able to cope ensuring spare capacity.

# SET LIMITS

Only one missed approach before diverting or holding

Divert fuel

Passenger comfort

Hold before approach to rebuild capacity

Create a trigger to recognise your overload

# ACCURATELY REHEARSE IN DETAIL TO CREATE A SOLID MENTAL MODEL

# What if something else happens!

Advise your intentions

Cabin

Company

ATC

Pax

Continue to update your situation and
DO NOT ACCEPT ANY FURTHER RISK.

OneCrew
Bringing People Together

Abnormal and Emergency events singularly do not cause overload because they are trained for and therefore ANTICIPATED.  The crew have a mental model and a mind map.

Multiple Emergency events or ‘Novel’ events can cause overload because they are NOT ANTICIPATED and there is excessive information and NO mental model.

# IF ALL ELSE FAILS

# The ‘NO NAME CHECKLIST’

OneCrew
Bringing People Together

This is when there is no check list for the state you are in.

Stop and recover your capacity.
Verbalise your current mental state
Do we have control?
Do we need to land immediately or ASAP
Dispense with all unnecessary check lists
Plan for worse case.

The industry is in love with TEM (Threat and Error Management)

CRM is not talked about

Most companies have dropped LOFT (simulator exercises)

‘PILOT ERROR’ is making a comeback

Some regulators have dropped the ball or never held it.

Mild overload will cause ERROR
Medium overload will cause MISTAKES
High overload will cause DISFUNCTION...Every time.
All incidents and crashes involve error and mostly due to overload.

We need more awareness training of our human performance limits.
Limits need to be demonstrated and observed (like stalling)
We must be taught to assess the demand and decide if our capacity is sufficient.
LOFT sessions can demonstrate our HIP limits and develop mental models and mind maps (expertise).

# Questions or discussion.

OneCrew
Bringing People Together