

Thank you for participating in this webinar and helping to make our world just a little bit Safer.
For more information on the subjects we just touched on you can go to our website at www.system-safety.com, click on Articles followed by DOM.

All of the Dirty Dozen have articles that have been published over the last six years. Permission is granted to used any of these articles to advance aviation Safety

My Notes

How to Avoid the Error you Never Intended to Make



No one intends to make an error so lets work out how we can lessen the chance of you making one!

Developed and printed by System Safety Services
for Elevate Aviation January 2021



Presented
in cooperation with



Presented by
Renee Dupont-Adam CEO
Gordon Dupont CEO Retired



Please note

This booklet was developed to be used with the Elevate Aviation Webinar of January 27 2021.

It contains a Notes space in the front and the back for you to enter any thoughts you may have at the time and to enter Safety Nets that will be discussed

The following space can also be used for notes to help enable you to recall the material presented.

Feel free to contact either Gordon or Renee at a later time if you have any unanswered questions that we can assist you with.

Renee at dupontr@system-safety.com

Gordon at dupontg@system-safety.com

My Notes

- If you have reached the stage where it is like an “8 track” in your head and there is no relief



Get Professional Help



If available, take advantage of your company's “Employee Assistance Program” (EAP)

- **Do something!** There will be some among us who will feel overwhelmed by the drastic changes in their life. Try to help them get help.

Positive Thinking Can Set You Free

- Sometimes called the “*Law of Attraction*” Positive Thinking is simply: think positive and positive things will happen to you
- While easier said than done the following 5 steps can help

Step 1 Take time to be thankful for what you have
You’re not living in a wet tent and still have two useable hands and feet. We all have things to be thankful for

Step 2 Set out to improve and do better every day
Set a goal and work toward it: “*Whatever the mind of man can conceive and believe, it can achieve*” Napoleon Hill

Step 3 Take time to laugh
Studies have found that 15 minutes of laughter per day will add years to your life. “*Inner peace begins with a smile*” Mother Theresa

Step 4 Give back to others
Even just a kind word can do wonders for the recipient as well as you, but be genuine.

Step 5 DO IT and keep doing it until it becomes a habit
We can all do better, but when we help others we are also helping ourselves

Your Facilitators



Renée Dupont-Adam is the CEO of System Safety Services in Vancouver, Canada. Renée began her life in aviation when she took her first flight from Lae – Port Morsbey, Papua New Guinea in her father’s Cessna 182 at the ripe old age of 3 weeks old. From that point forward Renée has been involved in all aspects of aviation from setting up the Aircraft Maintenance Engineers Association (PAMEA), the Maintenance and Ramp Safety Society (MARSS) and

helping present the 1st World Conference on Maintenance Errors and Their Prevention in 1995. She held the position of Editor for “GroundEffects” from 1997 – 2002. Renee is an active member of both the Quarter Century Club in Aviation as well as Women in Aviation International.

Renée continues to facilitate workshops all over the world in the interest of furthering Safety awareness by helping engineers and companies develop “Safety Nets” to lessen the occurrence of making the mistake they don’t even intend to make.



Gordon Dupont entered aviation in 1961 as a missionary pilot in New Guinea. Through the years he worked on and had signing authority on aircraft from a piper cub on floats up to a Boeing 747. He was an aviation accident investigator for 7 years and worked for Transport Canada developing human Factors workshops for aircraft maintenance engineers. He has been everything from a commercial pilot to social worker to principal of an aviation vocational school. In 1999 he started System Safety Services retiring

in 2020 as Renee move up to the role. He is enjoying writing and occasionally assisting with webinars knowing that the company is in good hands.

Our objectives

- 1) To introduce you to why we make errors and
- 2) To provide you some insight into how you can avoid making an error.

So What is Human Error?

2

- Human Error is whenever the outcome of something we did or didn't do, is not what we expected.

Gordon Dupont



[Human] errors

are not the cause of accidents.

The causes are to be found in whatever

it was that interfered with the

[guilty party's]

{performance judgment} at a critical moment

the outcome (result) of which is a

[human] error

Jerome Lederer

Flight Safety Foundation

Adapted by G. Dupont

Here's Why Human Error Causes So Many Accidents

Human Failure is responsible for at least 80% of aviation's accidents

99.99+% of these failures are not intentional

Many persons who make an error have no idea why they made the error

Lack of Knowledge of what causes a person to make an error is one of the major contributing factors to the error.

- Human Factors training gives you that all important Knowledge.

Exercise Has It's Benefits 11

- ✓ It's an excellent means of putting the "glass of Stress" down
- ✓ Another benefit is it improves one's resilience to Stress
 - A study was done involving rats that were stressed with an electrical shock at any time
 - Half the rats had an exercise wheel in their cage, the others had nothing
 - The rats with the exercise wheel actually ran on their own volition



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 - Half the rats had an exercise wheel in their cage, the others had nothing
 - The rats with the exercise wheel actually ran on their own volition
 - The rats that ran were calmer and less stressed than those who didn't
 - The same test was done with humans who were subjected to being spun and tilted at unknown intervals
 - The half that exercised were less stressed with the unknown
 - It was discovered that exercise produces a protein called Galanin in the brain that serves to calm the mind



10

Have a hobby



Take a holiday



or "mini vacation"



Meditation



or practice a faith



Talk to someone



Write things down and work on what you have control of



Have a pet



But choose the right pet

Not this



But choose the right pet



Like these

Our Stress Relievers

So let's talk about the "Factors" that can cause us to make an

3

- Ø What sets us up to make the error that we don't intend to make?
- Ø How do we prevent the error?

While the Dirty Dozen are not the only contributing factors to human error they are the most common

In the limited time that we have, let's try to understand how they contribute and what Safety nets we can put in place to lessen the chances of them contributing to us making an error

1

Lack of Communication

- The failure to exchange information
- Seek first to understand, then be understood (Learn to listen)
- The "Mental Pictures" must match

Maintenance Dirty Dozen

- | | |
|--------------------------|--------------------------|
| 1. Lack of Communication | 7. Lack of Resources |
| 2. Complacency | 8. Pressure |
| 3. Lack of Knowledge | 9. Lack of Assertiveness |
| 4. Distraction | 10. Stress |
| 5. Lack of Teamwork | 11. Lack of Awareness |
| 6. Fatigue | 12. Norms |

The failure to ensure that the "Mental Pictures" match



Lack of Communication Safety Nets

- | | |
|--|---|
| <p>Verbal</p> <ul style="list-style-type: none"> Discuss work done and what has to be completed Paraphrase to ensure the "Mental Pictures" match Never assume anything | <p>Written</p> <ul style="list-style-type: none"> Check logbooks for snags or deferred items Write to insure the person reading will understand what to do Use simple, clear and concise language |
|--|---|



2

Complacency

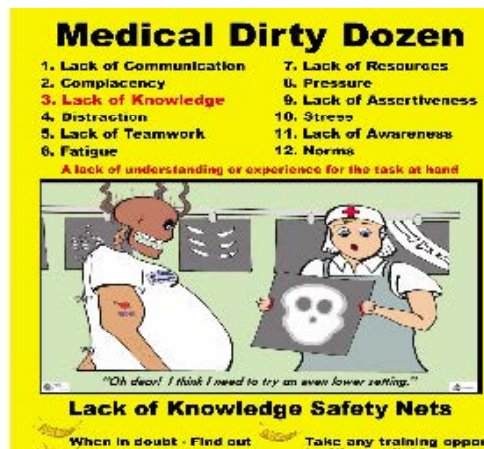
- Self satisfaction resulting in a loss of awareness of the dangers
- The greater the competency of the person, the more common this contributing factor is
- The person will begin to see and hear what he/she expects to see and hear



3

Lack of Knowledge

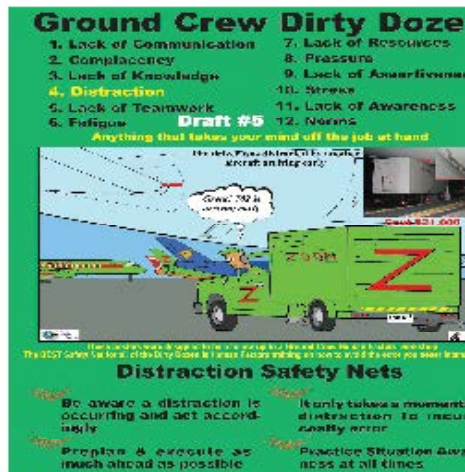
- A lack of understanding or experience for the task at hand
- Can occur at any stage of a work career with constant changes
- Training is always a Safety net and a good investment



4

Distraction

- Anything that takes your mind off the job at hand
- Responsible for 15% of all human error
- Number one cause of forgetting
- Our mind can work faster than our hands

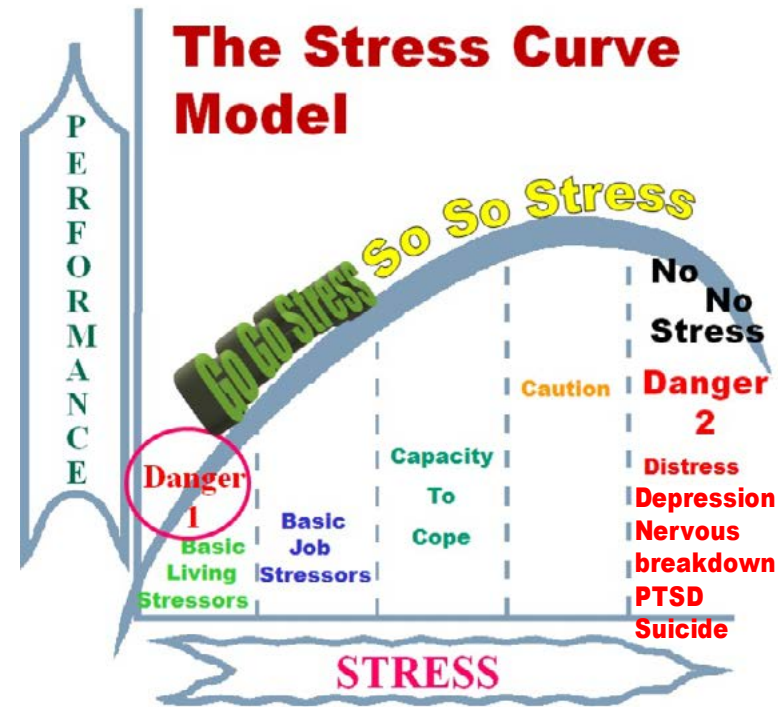


Stress is

Subconscious

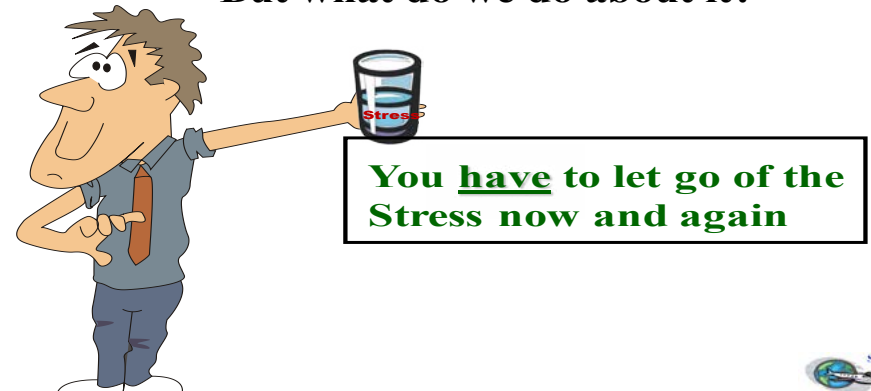
The body's response to the demands placed upon it

Hans Selye
Gordon Dupont



Yerkes -
Dodson
Curve
(1908)
Adapted
by
G. Dupont

Excess Stress is Bad News
But what do we do about it?



Stress is

8

Is one of the big 4 along with:

Lack of Communication
Fatigue and
Lack of Teamwork

Stress has resulted in hundreds of unnecessary fatalities over the years

COVID19 earns the title of the #1 stressor of 2020

Day after day we turn on the news and see the following:

Over 40 airlines have failed so far this year
and more are set to come
American Airlines lays off 32,000 employees
More than 17,000 planes parked

And you are thinking

Will I still have a job tomorrow?
Will we be in another lockdown?
How is our son going to support his family?
Will our daughter have to move back home?
Do we have enough toilet paper?
Etc., Etc., Etc.

5

Lack of Teamwork

- A failure to seek and consider the input of others
- Becomes more common as a company grows
- Calls for trust, a common goal and communication
- Is a must for any SMS to succeed

6

Fatigue

- A loss of alertness and a feeling of tiredness that eventually ends in sleep
- The #1 contributor to error
- We (*the industry*) tend to underestimate the problem
- We (*the individual*) tend to overestimate our ability to deal with it

7

Lack of Resources

- A lack of material or support to safely carry out the task at hand
- It is not uncommon, when times get tough for persons to be expected to do more with less
- One has to learn when to say NO if it affects Safety

5

Maintenance Dirty Dozen

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A failure to seek and consider the input of others

Among the many contributing factors was the lack of teamwork between the persons doing the work and the person signing for it who did not know that a tire was very low on pressure



261 Fatalities

Lack of Teamwork Safety Nets

- Call for Common Goal, Communication & Trust
- Where there is trust there will be respect
- Recognize a common goal
- Ensure that everyone has the same "Mental Picture" by discussing the job to be done
- TCAM - Together Everyone

Flight Crew Dirty Dozen

- | | |
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A loss of alertness and a feeling of tiredness that eventually ends in sleep



Fatigue Safety Nets

- Develop a culture for enough sleep & exercise
- Know the symptoms & signs
- Conduct some type of check every 15 minutes or so

Maintenance Dirty Dozen

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A lack of material or support to safely carry out the task at hand

Five cents worth of unavailable 1/8 inch shrink-wrap (spaghetti) would have prevented the short circuit that lead to the accident



Lack of Resources Safety Nets

- If you even think it could compromise Safety, find the resource
- Maintain a standard and if in doubt ground the aircraft
- Order and stock parts before they are required
- Know all available parts sources and arrange for pooling or loaning
- Think of what the consequences would be if anything goes wrong
- Practice Risk Management (Worst Case vs. Your Benefit)

8

Pressure

- The urgency of matters requiring immediate attention
- Most pressure is self pressure but the person fails to realize it
- Training must provide a model to help them recognize the true source of pressure

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The urgency of matters requiring immediate attention



Pressure Safety Nets

- Know where the pressure is actually coming from & that it is not self induced
- Clearly state your case until there is a safe resolution
- Saying NO for Safety is always an option
- Stop & look at the situation rationally before acting
- Ask for extra help
- Remember who will "Thank" you if you cause an accident

Maintenance Dirty Dozen

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Failing to act in a bold and confident manner on safety concerns



Lack of Assertiveness Safety Nets

- Know the standard and refuse to let circumstances compromise it
- Calmly state your firm position on matters of safety
- If it compromises safety, you must say NO. It's YOUR duty, your decision and your future.
- Remember - No one will thank you if you are responsible for an accident.

Maintenance Dirty Dozen

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The subconscious response to the demands placed on a person



Stress Safety Nets

- STOP - Take a few deep breaths
- LOOK - At the problem rationally
- LISTEN - To what you can control
- ACT - Do it one step at a time
- Discuss the problem with someone who can help
- Develop an exercise routine
- Take a short break from the stressor - Hobby, Movie, Short Holiday
- Do not use alcohol or drugs to relieve stress
- Meditation can help

11

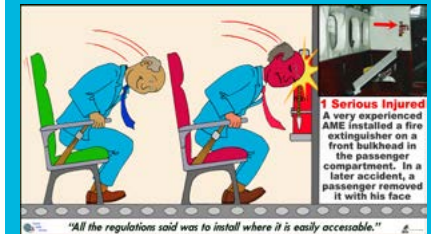
Lack of Awareness

- A lack of alertness and vigilance in observing
- Usually occurs to the very experienced
- Believe they are doing the right thing but have not thought it through
- Needs to ask more "What ifs"

Maintenance Dirty Dozen

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A lack of alertness and vigilance in observing



Lack of Awareness Safety Nets

- Ask yourself - "What future problems could this task create?"
- Check to ensure there is no conflict with an existing repair or modification
- Think of what can occur in an accident
- System knowledge and experience promotes awareness
- Ask others if they see any problems with the task at hand
- Don't disregard conflicting information

12

Norms

- Unwritten rules dictated and followed by the majority of the group
- Peer pressure and the desire to "fit in" are major influencers
- Not all norms are negative

Maintenance Dirty Dozen

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Unwritten rules that are dictated and followed by the majority of a group



Norms Safety Nets

- Identify the negative norms. They detract from an established safety standard
- Work to eliminate negative norms
- Refuse to participate in negative norms
- Always follow manufacturers procedures or have the procedures changed
- A professional doesn't take shortcuts
- Accentuate the positive norms

Lets go back and look at one that has become much more prominent over the last year.