

# GroundEffects

Reporting Maintenance and Groundcrew Error Reduction Efforts

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[www.marss.org](http://www.marss.org)

**Editors Note:** *Dr. James Reason is a world recognized leader in the field of human error. In this article he has given some food for thought on error management including a "gem" which we can all use – Mental Rehearsal. Read on and add this one to your safety net.*

## Trends In Error Management

The past two decades have seen a steady swing away from blaming air accidents largely upon the errors of people at the "sharp end" and towards recolonizing the casual influences or organizational, systemic and even societal factors. The errors of pilots, air traffic controllers and maintainers are now seen more as consequences rather than causes. Front-line personnel are viewed as the inheritors rather than the instigators of bad events. Identifying such unsafe acts marks the beginning of a search for explanations rather than ending it.

There have been several important milestones along this path towards the recognition of the organizational and systemic origins of air accidents. These include:

- The Air New Zealand DC10 disaster at Mt. Erebus in 1979 and the subsequent Mahon Report (1982)
- The F-28 crash at Dryden Ontario in 1989 and the multi-volumed Moshansky Report (1992)
- The 1991 crash of a Continental Express flight at Eagle lake, Texas, and Dr. John Lauber's dissenting comments in the associated NTSB report (1992).
- The inclusion in the 8th Edition of ICAO Annex 13 of specific instructions to air accident investigators to include "pertinent information" concerning organizational structure and functions, resources, economic status, management policies and practices, and regulatory framework.
- The disbanding of the Australian CAA in 1995 following two high-profile commuter crashes.

## From the board of the Maintenance And Ramp Safety Society

At the last board meeting a motion was passed to reduce the corporate membership fee from \$500.00 down to \$300.00. This decision was made to encourage more corporate members to join.

Present corporate members will receive a \$200.00 credit on their next renewal.

It was felt that it is more important to have more corporate members who are informed and supporting the goals of the society than to charge a high membership fee.

If you are not a member the individual membership is still \$75.00 and the corporate is now \$300.00.

Thank you for your support

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GroundEffects would like to extend our thanks to the following companies for their generous contributions.



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## Help us to prevent accidents before they happen!



**GroundEffects** (ISSN 1094-0146) is the official newsletter of **MARSS (Maintenance and Ramp Safety Society)** and is published four times per year to discuss issues affecting maintenance safety. We offer practicable solutions to maintenance managers, regulatory authorities, and unions charged with improving safety and reducing costs.

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### Editors note:

The following update on last issues article "The Terrible Odds" certainly illustrates how easy it can be to make an error and the compounding difference two little ways to cause an error can make. It sure makes the chances of making an error a lot higher than any chance of winning a lottery.

## The Terrible Odds

In the last issue we offered an exercise to help illustrate the ease with which an error is made and the odds of making an error with just one washer and nut on a bolt. **WELL THE ODDS JUST GOT WORSE!** A lot worse in fact, as a recent workshop I facilitated pointed out that two more errors can be added to the 12 already listed, by either under or overtorquing the nut on installation.

Add those two errors to the 12 already identified and the odds go like this.

1 team with the one nut and washer equals 14 ways to make the error.

2 teams with their nut and washer equals 196 ways to make the error.

3 teams now equals 2,744 ways to make that error.

4 teams equals 38,416

5 teams equals 537,824

6 teams equals 7,529,536

7 teams equals 105,413,504

and 8 teams equals 1,475,789,056

That is almost 1.5 billion ways to do it wrong and still only one way to do it right. Now if that don't make a believer on the importance of human factors training on how to avoid making errors, than I guess nothing will.

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Editors Note: This article comes once again from GreyOwl Consultants in Onanole, Manitoba. Written by Richard Komarniski. It is an article written on Distraction and the importance of this big factor in Aviation Maintenance. If you would like more information on GreyOwl Consultants. You can visit them on the web at [www.greyowl.com](http://www.greyowl.com).

## Distraction

When we look at aviation accident reports or read articles on accidents we find that from time to time a distraction affected the judgment of maintenance technicians, supervisors or managers.

**What is a distraction?** It is the act of distracting or the condition of being distracted. It can also be an extreme mental or emotional disturbance.

Distractions are a common occurrence in all of our lives, both at home and at work. But if distractions occur in a critical phase of our work, they can have disastrous consequences. Psychologists have identified distraction as the number one cause of forgetting. We humans are always thinking ahead, both consciously and subconsciously. For example, if we are distracted to the point of interruption during the performance of a task or procedure, when we return to the job, we often think we are further ahead than we actually are. This is a natural tendency which occurs frequently. Often after an error has occurred, the AMT will be at a loss to explain how it happened. Again, in addition to distraction, if other factors are present such as fatigue and stress, then the likelihood of an error occurring will be increased.

As discussed in previous articles, one safety net that we must keep in place is to always work to maintain the rational state of mind as professional AMTs. All distractions cause us as individuals to shift from the rational state to the emotional state of mind. Then before we know it, the distraction that we encountered may set us up to create an error and we have forgotten an important step to prevent an incident.

What causes distractions? From a technician's point of view, we become distracted by hangar doors opening when the temperature is cold outside, poor planning of aircraft movement, illness, and a ringing telephone. I have seen mechanics cut their foreheads scrambling out of the tail of an aircraft to answer a ringing telephone at all costs. Are we conditioned by the ringing bell? What is so important about answering the telephone?

Other distractions include visitors, family life, lack of parts and tools, housekeeping, shift turnover, and change in priorities such as occurred in the incident John Goglia discusses in the March/April 1996 issue of **AMT**. In this incident, the technician who was reinstalling avionics components after a sheet metal repair, was pulled off of the reinstall task to work on another job. When the technician returned, someone else had apparently completed the task and it appeared that everything was put back together. But

this wasn't the case and it resulted in an aborted takeoff because the pilot static line was not hooked up to the air data computer.

In my own career, I worked in an aviation company where people thrived on playing mind games with other employees or managers which caused considerable antagonism. This was not a fun place to work. If someone made an error in judgment and we were the one indirectly responsible by antagonizing that individual, could we live with our conscience? Life is too short as it is, but we still see people in airlines who abuse the system for their personal vengeance or insecurities. These are additional burdens which create more distractions to other employees normal routine.

Are we working to work toward the company goal and have productive and meaningful days or do we focus our energy on antagonizing each other? It upsets me just to be writing about this, but some people have not risen above this type of behavior. As we talk about professionalism, part of our role as professionals is that we must work together and understand and support each other. If the ship goes down, we may go down with it.

### SAFETY NETS

We have to rely on each other when it comes to distractions. A few easy to follow safety nets can go a long way to preventing both minor and major incidents. These include:

- Support each other and work together as a team.

(Con't on Page 8)



# GroundEffects

(Con't from page 1, Trend Management)

The question I want to address in this talk is: Has the pendulum swung too far? Has the ever-widening spread of causal fallout from the individual errors to system weaknesses reached to point of diminishing returns? Is it time to return to some intermediate position that acknowledges the importance of both active failures and latent conditions, and especially their complex interactions?

I will argue that there are a number of trends in safety science and error management that suggest there will be a swing back towards some more moderate position on the continuum of individual to systemic causal attributions. These trends cluster around a number of issues:

- Latent 'Pathogens' are present in all technological systems. Their presence does not discriminate between normal states and accidents. As such, they are more properly conditions rather than causes. The more exhaustive the accident inquiry, the more latent conditions it will discover. Only local events will determine whether or not there is a bad outcome.

Models of accident causation and accident inquiries need to be judged by their explanatory value, their predictive value and their remedial value. Individual factors alone only have a small to moderate value for all three goals. Overall, workplace and organizational factors contribute the most added value. However, there are rapidly diminishing returns on pursuing the more remote influences, particularly in regard to developing effective counter-measure and risk management.

- Lately, it has come to be recognized that an informed safe culture depends critically upon the trust of the workforce. Neither a punitive nor a blame free culture is satisfactory. A small percentage of unsafe acts are reckless and egregious. Aviation organizations must establish and agree the line between acceptable and unacceptable actions. Only on the basis of such a distinction can a 'just culture' be developed. A just culture is the key to a reporting culture which, in turn is the key to a safe culture.
- Error management needs to be a comprehensive package. There is no best way. Different counter-measures need to be targeted at different levels of the system: the people at the 'sharp end', the task, the team the workplace and the organization as a whole.
- Finally, we have to recognize (in Karl Weick's inspired phrase) that safety is a 'dynamic non-event'. It is achieved by the adjustments, recoveries, compensations and adaptations of many different people at many different levels of the system - but there is no visible 'event'. Everything worked as planned. If we are to exploit human strengths - rather than simply focus human limitations - we need to understand how these compensations are achieved and train for even greater excellence in this regard. One interesting development in this area has been the growing recognition of the importance of mental rehearsal or mental simulation (prior to action) in achieving successful performance. Good pilots and outstanding surgeons practice mental rehearsal instinctively. Our need to understand this 'thinking before you act' and ensure that acquiring these mental skills forms part of

the training of all aviation professionals.

I predict that in the near future one of the ways that regulators will judge the safety competence of an organization will relate to whether or not they avoid the trap of having their management philosophy (and associated error management programs) dominated by either individual factors or system factors. Safety sophistication demands a finding a sensible balance somewhere between these two extremes of the 'blame' continuum.



*James Reason has been Professor of Psychology at the University of Manchester since 1977, from where he graduated in 1962. He received his Ph.D. from the University of Leicester in 1967. After graduation, he worked at the RAF Institute of Aviation Medicine and at the US Naval Aerospace Medical Institute. For the past 25 years, he has been researching human error and the ways in which people contribute to accidents in complex technological systems.*

*His books include: Human Error (1990), Beyond Aviation Human Factors (1995), and Organizational Accidents, to be published later this year.*



**Editor's Note:** Evangelos Demosthenous gives us an informative look at Safety Management. He has an excellent model of building blocks which demonstrate where safety culture fits in and how easy it is for the complete thing to collapse if the commitment by both the workforce and management isn't there.

## THE ROLE OF THE HUMAN ELEMENT IN ACHIEVING A SAFER AND A MORE EFFICIENT AIRCRAFT MAINTENANCE SYSTEM

A perspective from within the working area

- The difference between 'human error' and 'systemic failures'
- The practicalities of trying to increase workloads while decreasing overhead costs
- The effects of the shortage of Maintenance Engineers/Technicians
- Importance of having the backing of management and the workforce
- How to implement new systems to enhance communication
- How can training become a valuable human factors tool

### Aircraft Engineers International (AEI)

*AEI is a non-profit professional organization representing Aircraft Maintenance Engineers worldwide, with affiliated organizations from 28 countries.*

*Its participation in various international bodies and associations aims at maintaining the high standards of Aircraft Maintenance and promoting aviation safety.*

*AEI participates in several Committees/Groups in the JAA and elsewhere, representing the Aircraft Engineers. Some of these are:*

The JAA Joint Steering Assembly

The JAA Joint Maintenance Committee

The JAA Joint Maintenance Board

The JAA Human Factors Steering Group

The JAA Maintenance Human Factors Working Group  
GAIN (Global Analysis and Information Network)

Human Factors is one of the issues that AEI has been promoting over the last few years. We have been invited by several airlines and training institutions to give presentations and discuss the issue. We have also distributed a lot of material to our members and contributed a lot to the work of the two JAA HF Groups mentioned above. We believe that a well designed and systematically implemented HF Program within a maintenance organization could offer the following:

- Improve Aviation Safety
- Improve Quality
- Provide a more Efficient Operation
- Reduce Maintenance Cost
- Enhance AME's (Aircraft Maintenance Engineers) Professionalism
- Improve working environment of the AMEs

### Human Errors against Systemic Failures

*"...(With reference to) accidents caused by human error... solutions are directed towards the individual, the front line operator, thus shielding latent organizational errors, which are, for most part, the root causes of such incidents."*

### ICAO HF Digest No 12 Human Factors in Aircraft Maintenance and Inspection

*Safety Management has two approaches, the proactive (preventive work) and the reactive (following incidents/accidents). The first element of the reactive approach is to be able to collect all the information related to all of the incidents. Unfortunately many organizations tend to concentrate on the human error only and the person who made this error e.g. pilot, engineer, controller. They do not go further to address the systemic or latent failures. Only by addressing those failures can similar incidents be prevented. It is also necessary to have a system and a culture, which ensure that people come forward and give all possible information about all incidents.*

### Trying to increase workloads while decreasing overhead costs

*Corporate Goals of airlines have changed since the financial executives have more important roles than the operating executives. The result is that Airlines today do not appreciate fully the value of safety and tend to seek measurable and short term payback when deciding in the implementation of a program the purchasing of equipment or the recruitment of staff.*

(Con't on page 6)



# GroundEffects

(Con't from page 5, The Role...)

Due to the excessive drop of air tickets, airlines are today subjected to great financial constraints. Airline maintenance in particular is affected in the following ways:

- Downtimes for maintenance are becoming shorter due to higher utilization of aircraft especially during the busy seasons.
- Training is one of the budget items that the financial people see as of minor priority. Therefore is usually the first one that is being cut. Today AMEs require even more training due to more complex aircraft systems. Training in areas other than the technical is also necessary today for an engineer to do his job properly.
- There is also an effort to keep AMEs cost low either by reducing their benefits or by keeping their numbers low.
- As a result of the above AMEs are required to work excessive hours of overtime subjecting themselves to serious stress and fatigue.
- Commercial pressures and Time pressures becomes also an everyday situation in many organizations.

The effects of the above can be easily seen as:

**Compromises in maintenance standards and  
Increased possibility of maintenance error**

## Engineers/Technicians Shortage

At least in Europe and the USA the problem of the shortage of Aircraft Engineers/Technicians is worsening. The main reasons, the effects and possible solutions for that issue could be summarized as follows:

### The Reasons

- Airlines abandoned apprenticeship programs from mid 80's
- Lack of commitment to training over recent years
- Lack of professional status
- Lack of a career structure
- Poor salaries compared with other groups inside and outside the industry
- Poor working conditions

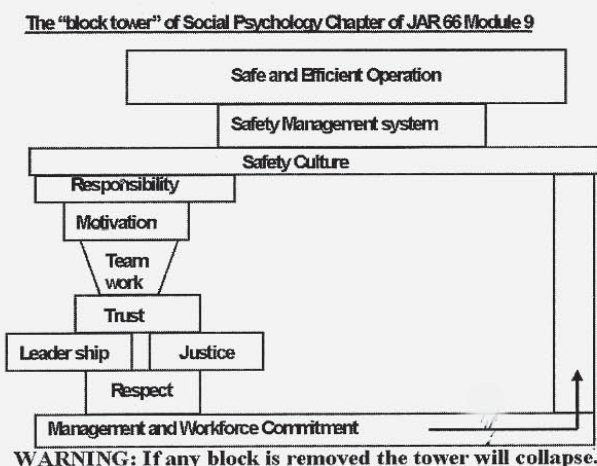
- Anti-social working arrangements
- Outdated management techniques
- Lack of job security
- Excessive commercial pressure

### The Effects

- AME's are required to work excessive hours of overtime
- Commercial pressures
- Time pressures
- Compromises in maintenance standards
- Increased possibility of maintenance error

### The Solutions

- Promote the profession as an attractive and a well paid career
- Provide apprenticeship programs
- Companies cooperation with the ab-initio Colleges
- Invest in training - initial, recurrent, skill development.
- Provide professional development including management, personal development and computer skills
- Provide motivational programs
- Offer reasonable benefits, salaries and incentives.
- Improve image, self-esteem of AME's



## The Importance of having the Backing of Management and the Workforce.

Implementing a new philosophy or a new policy, within an organization, is not easy, especially when the involvement of people is necessary. In order for this implementation to be successful this new policy has to reflect the current culture of the



(Con't from page 6, The Role...)

organization. And this culture must be consistent throughout the organization, from the front line operator to the top director.

For example if we believe that collecting all the data from incidents is important both the management and the workforce support is needed, in order to achieve this. The culture within the organization must be such that the workforce believes in the importance of this and is willing to report every incident. On the other hand the management should adopt a 'just' system in dealing with these incidents without punishing unfairly the people who are involved in the incidents.

Principles such as justice, trust, cooperation, motivation and teamwork should be present within the culture of a company, when the company aims in high achievements such as a "safer and a more efficient aircraft maintenance system".

### ***How to implement new systems in order to enhance communication.***

Statistics show that the main cause of a lot of aviation maintenance incidents is ineffective communication. It is also apparent that communication is a precondition for the achievement of any of the above mentioned principles such as trust, cooperation and teamwork.

*Communication should be approached in a systematic way and clear objectives should be specified. Some of the areas*

*that require attention are the following:*

- *Pass on to everyone basic communication skills e.g. listening, running meetings etc*
- *Employees have a lot of good ideas should be given opportunities to express them*
- *Enhanced communication required when different organizations merge*
- *Improve communication between employees of different departments*
- *Improve communication between the flight crews and the engineers*
- *Incidents reporting and publishing of outcomes*
- *HF training programs offer a good platform to achieve communication objectives*

### ***How can Training Become a Valuable Human Factors Tool***

Several airlines are implementing HF training programs some with considerable success, others with less success. It is a period that most airlines are introducing or thinking to introduce such programs either due to the new JAA requirements or because of the success stories of other operators. Experience and feedback from programs that are running has shown that some of the basic elements of success are:

- Programs must have clear objectives
- Objectives should include the development of skills and attitudes
- Objectives should

meet the objectives of a broader HF program of the organization

- Design of the training program should consider inputs from the workforce
- The facilitators/instructors should meet a set of requirements
- Must be a continuous process - followed by recurrent programs
- During the program suggestions from the participants should be listened to and actions should be taken as necessary

### ***Closing Remarks - The Role of the Human Element***

Aviation is a very fragile, highly demanding, industry, where surviving huge financial constraints has to be balanced with keeping safety standards high.

The human element has the most important role in keeping the correct balance between those two. On the maintenance site this role lies to a large extent on the shoulders of the Maintenance Engineers. Organizations wanting to look into the future should give proper consideration to their greatest asset, the **HUMAN ELEMENT**.

Evangelos Demosthenous

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**International**

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(Con't on page 8)



(Con't from page 7, The Role...)



**Evangelos Demosthenous** is a Licensed Aircraft Engineer, holding both British CAA and FAA licenses. He has been working for Cyprus Airways on Line Maintenance for 11 years, the last 10 as a superintendent. In parallel to his job he has been active in the area of Human Factors (HF) and Ramp Safety.

He is a Qualified Facilitator/Instructor on Human Factors in Aviation Maintenance. He is also an IATA Certified Instructor specialized on Ramp Safety. He developed and delivers several training programs on Human Factors and on Ramp Safety within Cyprus Airways and for other organizations in Cyprus and other countries. He was invited to give lectures on Human Factors to major airlines of countries such as Norway and Finland.

He is the Human Factors Coordinator of Aircraft Engineers International (AEI), a non-profit professional organization. He is also a member of the JAA Human Factors Steering Group, representing AEI.

## HUMAN FACTORS IN MAINTENANCE WORKSHOPS

Human Factors in Maintenance Workshops (HPIM) Part 1 Workshops are held once or twice monthly. They are held at the **Canadian Airlines Ltd** Training Facility Centre at YVR on Grant McConachie Way in Richmond, British Columbia.

Although they are run for Canadian Airline employees, there is inevitably space for staff of other companies, who are welcome. To date there have been attendees from companies in Canada and the United States including Hawaii. The United States Military have also attended these workshops.

The next HPIM Part 1 course will be held in Richmond on October 27/28, 1999. At present, limited spaces are available. This can change rapidly. For more information, please contact us by phone/ fax or e-mail.

Some of the Topics covered in Part 1 are:

- What Determines a Person's Characteristics?
- Behavioural Analysis
- Behavioural Dimensions
- Assertiveness
- Characteristics of an AME

- Human Factor Errors
- Stress Management and Fatigue
- Communication
- Survival Exercises
- Contemporary and Historical Case Studies

MARSS believes that by attending this course, you will greatly enhance your performance as a successful HPIM facilitator.

To obtain more details, please contact MARSS.

Phone: (604) 207-9100

Fax: (604) 207-9101

e-mail:

*Part 2 and Facilitators courses can be arranged upon request at a location of your choosing.*

### Part 1 Workshop Dates for 1999

NOVEMBER 4/5, 16/17, 24/25

DECEMBER 14/15

We will be pleased to arrange to hold the Workshops at other venues.

Please contact our Executive Secretary, Mr. John Braund at:

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(Con't from page 3.....  
Distraction)

- Plan the tasks and stay focused.
- Put it in writing. The written word is a valuable safety net especially for the distraction of shift changeover.
- Follow the work cards and check sheets. Document the work you have completed as you progress through the task.
- When you come back to a job take three steps back and evaluate what is done and what is not done.
- Do not let complacency reduce your standards. Take pride in your work.

We face many distractions every day which can affect our judgment. If we work together, help each other, and use the safety nets identified in this article, then distractions will not be a big factor in our lives.



Editors Note: The following article is an article that made me stop and re-evaluate my life and the way I look at things. It is not about Aviation or about Maintenance it is about people and the different ways people can look at things.

## Attitudes

**READ THIS. LET IT REALLY SINK IN. . .  
THEN CHOOSE HOW YOU START YOUR DAY TOMORROW.**

Michael is the kind of guy you love to hate. He is always in a good mood and always has something positive to say. When someone would ask him how he was doing, he would reply, "If I were any better, I would be twins!"

He was a natural motivator. If an employee was having a bad day, Michael was there telling the employee how to look on the positive side of the situation. Seeing this style really made me curious, so one day I went up to Michael and asked him, "I don't get it! You can't be a positive person all the time." How do you do it?

Michael replied, "Each morning I wake up and say to myself, Mike, you have two choices today. You can choose to be in a good mood or you can choose to be in a bad mood. I choose to be in a good mood."

Each time something bad happens, I can choose to be a victim or I can choose to learn from it. I choose to learn from it. Every time someone comes to me complaining, I can choose to accept their complaining or I can point out the positive side of life. I choose the positive side of life.

"Yeah right, it's not that easy," I protested. "Yes, it is," Michael said. Life is about choices. When you cut away all the junk, every situation is a choice. You choose how you react to situations. You choose how people will effect your mood. You choose to be in a good mood or a bad mood. The bottom line: It's your choice how you live life.

I reflected on what Michael said. Soon thereafter, I left the Tower Industry to start my own business. We lost touch, but I often thought about him when I made a choice about life instead of reacting to it.

Several years later, I heard that Michael was involved in a serious accident, falling some 60 feet from a communications tower. After 18 hours of surgery and weeks of intensive care, Michael was released from hospital with rods placed in his back.

I saw Michael about 6 months after the accident. When I asked him how he was, he replied "If I were any better, I'd be twins. Want to see my scars?" I declined to see his wounds, but did ask him what had gone through his mind as the accident took place. "The first thing that went through my mind was the well being of my soon to be born daughter," Michael replied. "Then, as I lay on the ground, I remembered that I had two choices: I could

choose to live or I could choose to die. I chose to live." "Weren't you scared? Did you lose consciousness?" I asked. Michael continued, "... the paramedics were great. They kept telling me I was going to be fine. But when they wheeled me into the ER, and I saw the expressions on the faces of the doctors and nurses, I got really scared. In their eyes, I read 'he's a dead man.' I knew I needed to take action." "What did you do?" I asked. "Well, there was a big burly nurse shouting questions at me," said Michael. "She asked if I was allergic to anything. Yes," I replied. "The doctors and nurses stopped working as they waited for my reply. I took a deep breath and yelled, 'GRAVITY.' Over their laughter, I told them, I am choosing to live. Operate on me as if I am alive, not dead."

Michael lived, thanks to the skill of his doctors, but also because of his amazing attitude. I learned from him that every day we have the choice to live fully.

Attitude, after all, is everything. You have two choices now:

1. Forget about what you just read.
2. Decide to be more positive in your choices.

I hope that you will choose #2. I did.

- Gordon Dupont

System Safety Services

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[www.system-safety.com](http://www.system-safety.com)



# GroundEffects

Editors Note: The following article is not about Aviation Maintenance but I believe it is an article that effects everyone in the world. At one time or another in your life I am sure that you have wanted to be a kid again. I know I do at some point almost everyday.

## Six

I am hereby officially tendering my resignation as an adult. I have decided I would like to accept the responsibilities of a 6 year old again.

- I want to go to McDonald's and think that it's a four star restaurant.
- I want to sail sticks across a fresh mud puddle and make ripples with rocks.
- I want to think M&M's are better than money, because you can eat them.
- I want to play kickball during recess and paint with watercolors in art.
- I want to lie under a big Oak tree and run a lemonade stand with my friends on a hot summers day.
- I want to return to a time when life was simple.
  - When all you knew were colors, addition tables and simple nursery rhymes, but that didn't bother you, because you didn't know what you didn't know and you didn't care.
  - When all you knew was to be happy because you didn't know all the things that should make you worried and upset.
- I want to think that the world is fair.
  - That everyone in it is honest and good.
- I want to believe that anything is possible.

Somewhere in my youth... I matured and I learned too much.

- I learned of nuclear weapons, war, prejudice, starvation and abused children,
- I learned of lies, unhappy marriages, suffering, illness, pain and death.
- I learned of a world where men left their families to go and fight for out country, and returned only to end up living on the streets ... begging for their next meal.
- I learned of a world where children knew how to kill ... and do!

What happened to the time when we thought that everyone would live forever, because we didn't grasp the concept of death?

- When we thought the worst thing in the world was if someone took the jump rope from you or picked you last for kickball?
- I want to be oblivious to the complexity of life and be overly excited by little things once again.
- I was to return to the days when reading was fun and music was clean.

- When television was used to report the news or for family entertainment and not to promote sex, violence and deceit.
- I remember being naive and thinking that everyone was happy because I was.
- I would walk on the beach on only think of the sand between my toes and the prettiest seashell I could find.
- I would spend my afternoons climbing trees and riding my bike.
- I didn't worry about time, bills or where I was going to find the money to fix my car.

I used to wonder what I was going to do or be when I grew up, not worry about what I'll do if this doesn't work out.

- I want to live simple again.
- I want to believe planes never crash.
- I don't want my day to consist of computer crashes, mountains of paperwork, derepressing news, how to survive more days in the month than there is money in the bank, doctor bills, gossip, illness and loss of loved ones.
- I was to believe in the power of smiles, hugs, a kind word, truth, justice, peace, dreams, the imagination of mankind and making angels in the snow.

**I WANT TO BE 6 AGAIN!**



## Editor's Note



Happy Fall! Welcome to the 14th issue of GroundEffects. It is hard to believe that it is slowly starting to get cold (or for some of you it already is). Winter is soon upon us, and that means Christmas and the end of the Millennium. For New Years we all tend to make a resolution to better ourselves in one way or another. This New Years make a resolution

to help make aviation safer. Vow to pass this issue of GroundEffects on to a friend or vow to pay attention to the Dirty Dozen and their Safety Nets. If we all make this effort then we are one step closer to safety in the aviation world.

This issue of GroundEffects talks about distraction and the role we play in Human Factors Training. Distraction is one of the worst Dirty Dozen errors to prevent. We all have distraction in our lives, but with aviation safety at stake, we need to try our very best to stop and complete what we are doing so after the distraction we can continue with our work and know exactly where we left off. Last summer I played a role as wife in the MARSS training movie "Too Many Cooks!" This movie showed distraction. I was the wife at home getting angry and upset that my husband was still at the hangar when he was supposed to be home hours ago so that we could go out with friends. My husband had to stop what he was doing (tightening a B nut) to get off the helicopter and answer the phone, only to have his ear taken off by me because he was still at the hangar. When I had finished yelling, I threatened that if he was not home with in the next few minutes that he would be eating alone again. After the telephone call the last thing on his mind was the B Nut, he was thinking about me. He forgot to tighten the B Nut and you can buy the video if you can't guess what happened next. Distractions do not necessarily have to involve people. Another common distraction is the lack of the proper environment to work in or the lack of the proper tools. Many problems arise during an 8 or 12 hour shift and it is important that we recognize the effects these problems or incidents may have on us.

Also, in this issue please take the time to read the article on Trends in Error Management and see how management and "The Blame" have changed over the years. The final major article is called The Role of the Human Element in Achieving a Safer and a more Efficient Aircraft Maintenance System. This a very powerful article with facts and ideas on Maintenance Safety.

We would also like to inform you of the price decrease in membership on pg. 1 and the Schedule of Human Factors Training Workshop. If you have not had the change to attend one of our workshops, please do. I guarantee that they will be very beneficial to you and your company.

I have added to this issue two non-aviation articles. Although

these articles are not aviation oriented, they are human factors oriented. I have found both to be uplifting and promising. When things get rough in the hanger remember the attitude article and perhaps things will seem brighter.

I would like to thank all of you for your constant support of GroundEffects and MARSS. I urge you to write to me with any ideas you might have for future articles or any comments you might have regarding current articles. I welcome your thoughts.

Enjoy the fall and remember that there is no better time to start practising your New Years Resolution!

Cheers!

Renée Dupont  
Editor

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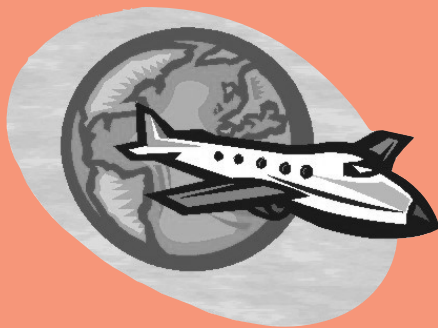
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System Safety Services will work with all of its clients until they are satisfied with the results. We are serious about working to make our industry safer.

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