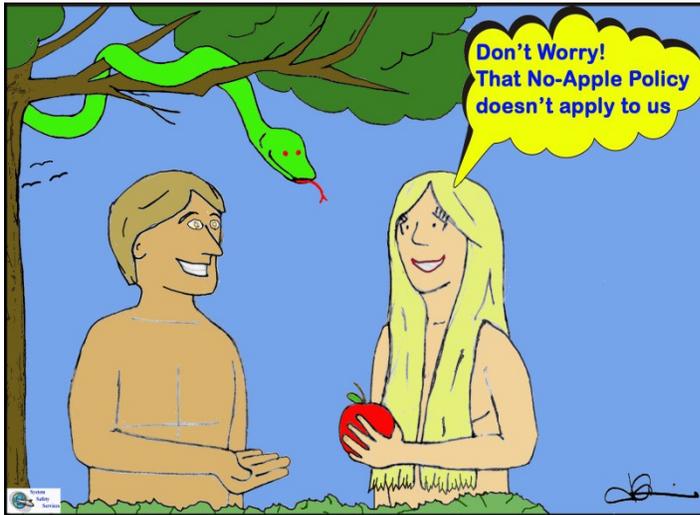


To Error is Human: But NOT With Aircraft



We humans have been making errors for a very, very long time and sadly will continue to do so.

In the past when an error was made we (often including the person who made the error) would say they were either careless, stupid, dumb or just too lazy to do it right. What about using their Common Sense? Obviously they

just didn't use their common sense. All of the reasons we have listed are not causes of a human error.

Human error does not cause accidents. What are you saying? This can't be true! For centuries we have been blaming human error.

We can all agree that human error is never done with the intent to cause an accident. If it is, I believe the correct term would be sabotage. Okay, we have established that we don't EVER intend to cause an accident, so what is it that interfered with his/her judgment or performance at that critical moment? The outcome (result) of this is the error. Many peoples have bet their life (and lost) that the actions they were performing were the correct ones.

What can interfere with a person's judgment/performance at a critical moment? Let's take a look at the "Dirty Dozen." They are:

- Lack of Communication
- Complacency
- Lack of Knowledge
- Distraction
- Lack of Teamwork
- Fatigue
- Lack of Resources
- Pressure
- Lack of Assertiveness
- Stress
- Lack of Awareness
- Norms

- For some, the notion that human error does not cause accidents will require a paradigm shift. A few will feel that we are just making excuses for a careless person and he/she must be held accountable for their actions.
- Just culture and the Dirty Dozen will be are topics for future articles.
- We can do something about human error (that's the good news)! We can learn how to avoid making errors or at the very least we can lessen the consequences when a mistake is made. Okay, here's a simple error:

- Has anyone ever left their gas cap off after filling up with gas? Or worse drove off with the hose still attached as in the picture?



- I recently went to the gas station to fill a jerry can with gas for my lawnmower. While there, I thought I might as well fill the truck's tank as well. I filled the jerry can first and then the truck. While I was replacing the truck gas cap, my mind was on the jerry can and that I must not forget it. I picked it up and put it in the back of the truck and somehow managed to drive off without shutting the truck's gas door. There was no intent to not close that door. Common sense says to close it before driving off and I think I have common sense? So why did I do it? Putting the gas in the back of the pickup was a **distraction** (that occurred at a critical moment). I was also under some **stress** knowing I was running a little late to pick up my wife at the store. There were at least two of the Dirty Dozen preconditions in the works; I managed to NOT complete the job at hand. I made a human error.

- In the past and even today, when an error was made we tried to prevent a repeat by making new regulations (an accident on a curve on a highway may result in a new sign indicating a curve ahead with a lower speed limit being erected). To help prevent another from making the same error, we often create new regulations.

- The second way we try to lessen errors is to "Murphy proof" the aircraft so the errors cannot be repeated. The gear up warning horn is a classic example of this. Today gas caps are attached so we can't forget them and some cars

have a warning light when the gas door is not closed. Notice in the above photo, the fuel hose has a breakaway at the end of it so that the gas pump can't be ripped off of its base causing fuel to go everywhere with a high risk of an explosion.

- We humans don't always follow the rules (topic for the next article) and we are geniuses at finding ways around a Murphy proof. Thus we must train the person on how to avoid that error in judgment/performance.
- Alexander Pope (back in 1709) had a very famous quote "To err is human, to forgive divine". We often use this quote to justify our mistakes. I would like to apply this 300 year old quote to our modern day profession of aircraft maintenance and see if we can try to lessen human error and forgive those who make the errors they don't intend to make.
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- Firstly, what is an error? In its simplest form, it is "anything in which the result was not what you expected". Thus, if you are divorced, you made an error when you married. Interestingly, some of us go on to repeat the same error more than once (has anyone been divorced twice?).
- Thus, in order to reduce human error we have to learn from our mistakes. This can be an expensive way to learn as it requires us to make an error before we react. Sadly, we don't always learn the first time and instead blame the error on being careless, stupid, dumb or just too lazy to do it right. It can also come as a surprise when you make the same mistake again.
- In order to learn from our mistakes we have to first learn why we make them in the first place and what we can do to avoid making them again. With that understanding we can now begin to learn from the errors we have made. We can begin to create "Safety Nets" in order to ensure that we don't make the same mistake again. A Safety Net is a practice or procedure that you use to help ensure that an error is not repeated. For example: you decide to always leave your keys hanging on a special hook whenever you enter the house. This will lessen the chances of you losing them somewhere. Better yet, let's try to learn from the mistakes of others. This is a lot less expensive and often a lot less painful. To do this we need to know about the mistakes and thus they have to be reported and analyzed.
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Alexander Pope
1688 - 1744
"To err is human. To forgive divine"

- This is where the other half of Pope’s quotation comes to play – To forgive (is) divine. Giselle Richardson, a keynote speaker at a human factors symposium, informed our industry that “only the Mafia with their cement boots have a harsher discipline policy.”
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- Often we, and others in our industry, will hide our error or mistakes in fear of punishment. Most people will report their errors if they understand why they made the error and they trust the system will treat them fairly if they report them. In order for this to take place, there must be a “Just Culture”.
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- A just culture is one where any error or near miss will not result in discipline except in cases of recklessness or sabotage. Recklessness must be defined as a case of an error in which the person knew there was a significant chance that an error could occur and chose to do it anyway.
- These reported errors can now be analyzed (risk analyses) and corrective actions can be put in place to eliminate or lessen the chance of the error reoccurring. That is what a correctly functioning Safety Management System will do. What we are talking about is actually really quite simple. We begin to sweat the small stuff so we don’t have to sweat the big stuff. We work, breathe and sweat the small stuff and with everyone’s participation our industry and the people in it will be Safer.
- Mr. Pope had it correct over 300-years ago.
- Have a Safe career and in the next article we will look at “why don’t we don’t just follow all the rules?”
- Gordon Dupont CEO System Safety Services