Take what you have

what you need
(Gap Analysis)

Check what you
should have

Formalize, document and act on how YOU are going to manage Safety

Most already have in place what's required for a SMS

Safety Management Systems – Where do you start? Phase One Safety Management Systems (SMS) have been around for a good while now and are here to stay, as they are the next logical step in reducing human error and its often costly outcomes. I called it "The Big Picture" in 1995 (for want of a better name.) If you refer back to article #13 - April 2016 you can read about that model that is shown in the "Gap Analysis" cartoon. If your organization has a Safety Management System ask yourself, is it working as efficiently as it should be? If not, hopefully the following articles will help.

The very first thing that any successful SMS **MUST** have is the commitment of the top management. They have to believe that the SMS will, 1) improve their bottom line and 2) help create a true Safety culture within the organization. If you want to see where your Safety culture stands now just go back to article #11 – Jan/Feb 2016 and #12 – March. 2016 and have the employees fill out the 20 questions developed by Jim Reason.

Any company that says that Safety is their top priority is dreaming. Profit has to come first as without it there is no need for Safety as the organization will cease to exist. I remember a meeting with a CEO who said; "we can no longer afford the Cadillac of maintenance as I am right now trying to figure out how to lay off 20% of our maintenance employees." Sadly, this company no longer exists. The best one can hope for is that Safety is a close second.

Figure 1 illustrates a typical company where profit is a high priority. There are human error costs that occasionally cut into all of the profit for a time when, for example, a tug runs into the side of an aircraft or as I've seen, the side of a 747 gets scraped bringing the aircraft into the maintenance dock in the hangar. It was considered just the price of doing business. Fire the guilty parties and move on.

This worked in the past, but without a concerted Safety culture a singe fatal accident can result in "The Death of an Airline." (Safety video #1 on System-safety.com website) Figure 2,   I investigated many accidents that after talking to their management, I knew that there was a fatal accident coming in the future. When investigating a minor accident, I recall the manager/owner saying in a loud voice when I
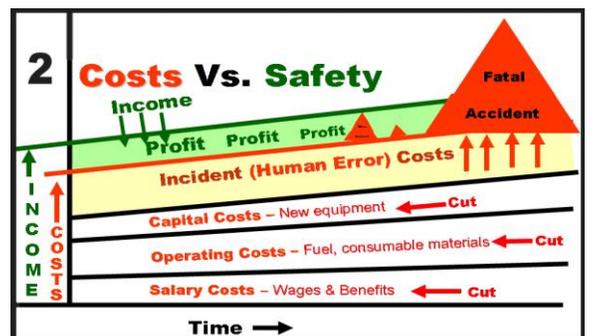
came in: "Watch out. Here comes the Gestapo." I mentally called them the "I'll kill you" airline. They did kill five due to a simple maintenance error followed by a pilot error and no longer existed shortly after.

A Safety Management System is going to cost money as shown in figure 3. The old saying "If you think Safety is expensive, try an accident;" likely won't cut it as an excuse for the expenditure. A regulation requiring it helps but management wants to see just what the return on investment (ROI) is going to be. ROI is simply the total cost of the setting up and running the SMS compared to the money saved in reduced costly errors. The difficulty with that is one can not calculate the cost of an accident(s) you never have.
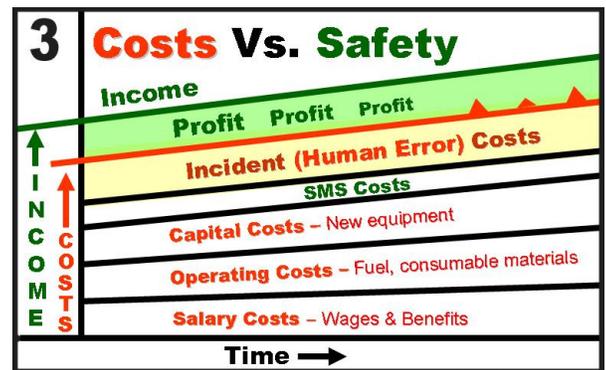
The reactive solution is to look at incidents that have occurred. Determine the true cost of the incident, for example: cost of the damaged part, cost to repair it, cost of aircraft down time, etc. Lets say the damage cost totaled $100,000.   Now look at the fix to ensure the event does not recur. The SMS is part of the fix with an estimated total cost of painting lines and training personnel etc at $50,000. But, we humans are genius at finding way to get around Safety nets developed to prevent a reoccurrence. Thus one has to factor in the probability of success of the fix. In some cases a WAG (Wild Ass Guess) may be necessary. Let's say that the chances of it preventing a reoccurrence is 75%. Multiply the % (.75) by the total cost ($100,000) to get a return of $75,000. Subtract the cost to obtain this return, $50,000, and the ROI is 25,000. This is a positive ROI on preventing a future occurrence.
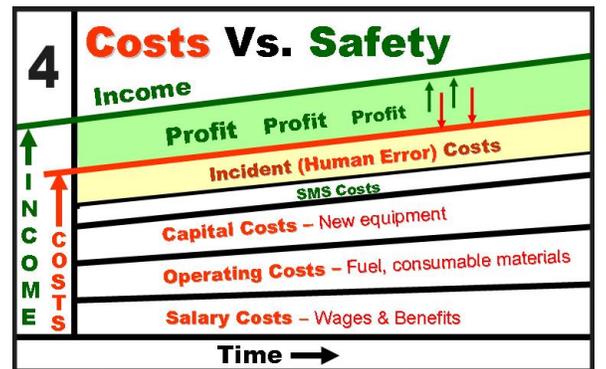
A properly functioning SMS will help prevent the occurrence from happening in the first place. Later we'll look at a simpler cost/benefit analysis model as well as a computer program that will greatly assist in illustrating with fancy charts, the cost benefit and ROI of the system.

Figure 4 indicates the SMS lowering of human error results in greater profit and certainly lessens the chances or odds of a major fatality accident occurring. Most managers are just too busy to do all of this for each incident, but a designed SMS program can make it easier to do and is better than the "trust me –its working", as we are having less human error costs.

Many companies have reported their human errors cost have decreased by over 50% but most rely on a gut feeling that it has improved as past costs of incidents were never properly tracked but hidden in the total maintenance costs as part of the price of doing business.

A bonus of the properly organized SMS is improved morale that leads to improved productivity that helps provide increased profits.

Sadly, as is so common in our industry, it sometimes takes a serious incident to bring about Safety imitates. A modern classic example of that has to be the Boeing MAX. Safety changes are now being made at a very high expense in lives, money and reputation. I would like to think that a properly functioning SMS would have resulted in the "small stuff" being reported which should have resulted in a full risk analysis being carried out before the two fatal accidents and grounding of the aircraft.

A Safety Management System also calls for an "Accountable Executive". This requirement now prevents the upper management from hiding under the umbrella of "I didn't know that was happening". If you look back at last month's article #49 - March 2020, you see that according to a study, the person who has the authority to commit funds to remedy a Safety hazard knows only 4% of the organizations hazards. The study was likely done on a large organization but even a small organization can have a leader who doesn't know what he/she doesn't know. A SMS will call for them to put a system in place so they will know as they will now be held accountable. This designated position can not be delegated to say a Safety officer but must be the person who controls the funds. This is a great incentive to allocate funds for a successful SMS, as a failure could put their job on the line or worse.

Once the commitment has been made the next step in this phase is to see where we are at and what is needed to move forward. The regulatory body of most countries will have material calling out what they want to see in a SMS.

The following is a sample draft (as I see it) check list to carry out at the beginning of the "Gap Analysis".

Before one can carry out a Gap Analysis, one has to know what the regulations are in your country as they can vary between countries.

If the response to the questions are not yes, Take the time to work out a **C**orrective **A**ction (CA) with a reasonable response time and a designated responsible person.

Phase 1 - Gap Analysis

1. Is all management convinced that SMS is a viable Safety measure?
Yes ___ No ___ Partial ___ CA (If required) _____

2 Is all management aware of what their responsibilities will be?
Yes ___ No ___ Partial ___ CA (If required) _____

3 Has there been an agreement to allocate the funds that will be required to set up and maintain the system?
Yes ___ No ___ Partial ___ CA (If required) _____

4. Is there an accountable executive that qualifies to hold the position?
 Yes ___ No ___ Partial ___ CA (If required) _____

5. Does the company have a qualified Safety manager to lead the development of the SMS and run it when fully in place?
Yes ___ No ___ Partial ___ CA (If required) _____

6. Does this manager have a direct reporting link to the accountable executive?
Yes ___ No ___ Partial ___ CA (If required) _____

As we move to Phase Two in the next issue there will be more questions for the Gap Analysis as we look at the Safety policy which will set the expectations of the SMS. If you have succeeded in setting up the foundation in Phase One, the toughest part is over. As the saying goes; "Rome wasn't built in a day". So, also, will a successful SMS take time to set up and be fully functional. Two to three years is not out of line. Stay tuned.