



FACILITIES SAFETY MEETING

Safety Checks-Tools for Expert Professionals

On October 30, 1935 at Wright-Field in Dayton Ohio there was a test flight for the new 4 engine airplane by Boing called the flying fortress. The test flight was considered a formality. The 4 engine plane was piloted by the Chief of the Air Corp Fight Testing. The plane climbed to 300 feet stalled and crashed.

The investigation determined that pilot error was the cause of the crash because the pilot had forgotten to release a new locking mechanism on the elevator and rudder controls. Newspapers were quoted as saying it was “too much airplane for any one man to fly. The air force cancelled its orders for planes only keeping a couple of planes to use for further investigation.

A task force of pilots was put together to examine the problem presented by the air plane. Two things were clear:

- Training was not the issue-It was hard to imagine a pilot more qualified than the pilot who was killed during the initial test run
- The new Plane was too complicated to be left of the memory of any one pilot



Pilot safety checklists were developed to include lists for takeoff, flight, landings, and emergencies. Following development of the safety checklists this particular plan flew 108 million miles without incident and was instrumental in winning World War II. Pilots needed to accept using the safety checklists and that using the checklist is a sign of strength.



Hospitals, clinics and emergency rooms have adopted the safety checklist. Emergency rooms are complex in the variety of cases seen. An ICU may have 178 tasks per day, such as putting in a central line. Mistakes have been dramatically reduced.

In construction safety checklists use has increased. The Citigroup building in downtown Manhattan is an example of a safety checklist failure. The 59 story building is built on 9 story columns. Wind tunnel testing reveled the structure would be subject to wind streams and turbulence. Calculations behind the design for stabilizing the building assumed joints in the giant braces would be welded.

Because joint welding is labor intensive and expensive the contractor switched to bolted joints. The changes were not reviewed with the engineers or the architectural firm. The communication portion of the checklist was not acted on. A year after the building was occupied the mistake was discovered. The building would not withstand 70 mph winds and hurricane Ella was on the way. Working overtime 2 inch thick steel plates were welded around two hundred critical bolts.

Checklists are tools to buttress the skills of expert professionals. In complex processes certain steps don't always matter but skipping steps can become habitual.

The types of checklists we use here at the lab include:

JHA, AHDs, Permits, Work Orders, etc...

