

Docket No. SA-538

Exhibit No. 20-K

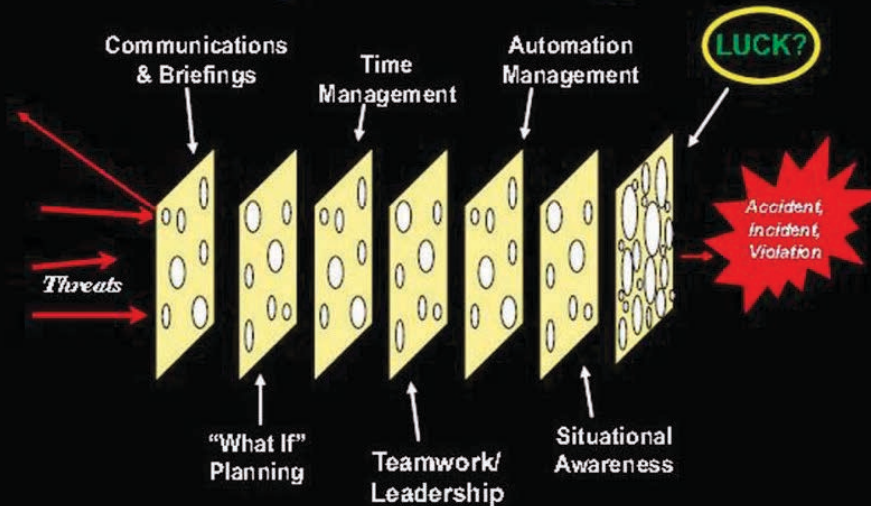
NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

CRM “Big 6”

(4 pages)

Don't Gamble With Safety!
Play The CRM "Big 6"!



Use Your Defenses Effectively

**Play the "Big 6" the next time
you're dealt a threat!**

*Maximize your safety margins through
effective CRM*



Use Effective CRM To Maximize Your Margin Of Safety

Communications

- **Think Out Loud**
 - When you recognize a threat, say something!
 - **Say what you mean, mean what you say**
 - Ensure feedback and confirmation
- **Ask Questions**
 - If you are wondering, ask!
 - **Be persistent if need be. Get proper resolution**
- **Know Personality Traits (Including Your Own)**
 - Domineering
 - Unassertive
 - Effective

Briefings

- **Avoid Rote Briefings**
 - Ensure content is useful and relevant
- **Brief the Bottom Line**
 - Set and communicate the limits
- **Brief the Exceptions**
 - Discuss what's different

"What If" Planning

- **Be Skeptical**
 - Challenge assumptions, ask "what if" questions
 - **If you are uncomfortable, SPEAK-UP!**
- **Plan for the worst**
 - Always have an out
- **Choose conservatively**
 - Remain within confines of SOP. Explore all options
 - When in doubt, ask yourself, "Do we need to be doing this?"

Time Management

- **Budget Available Time**
 - Move tasks to low workload phases of flight when possible
- **Add Time**
 - Slow down horizontally, vertically, and operationally
 - Time pressures create threats which can induce errors, may be insidious in nature
- **Set Priorities**
 - When time is limited, focus on the essentials. Fly the airplane. Safety of flight is always first.

Teamwork/Leadership

- **Balance Task Loading**
 - Divide up the workload within the cockpit
 - Be ready to reassign tasks
- **Off - Load Tasks**
 - Get help from outside the cockpit
 - ATC, In-Flight Crew, Dispatch, etc. may all be able to help
- **Leadership**
 - **Effective Teamwork is directly connected to effective leadership by the Captain**

Automation Management

- **Use the 3 "Rules of Recovery"**
 - **Immediate maneuvering** → Reduce Level of Automation
 - **Automation is the problem** → Reduce Level of Automation
 - **Workload high** → Increase Level (if automation is not the problem)
- **Use Active Monitoring**
 - Visualize, Act and Compare
- **Communicate Intentions and Actions**
 - Especially during periods of high task load

Situational Awareness

- **SA Loss Defense - 3 "Rules of Recovery"**
 1. **Recognize** → Take your "Gut Feeling" seriously
 - Look for the Threats
 2. **React** → Immediately ensure safe flight path & energy state
 - Add Time
 3. **Regain** → Rebuild your SA
 - Communicate

Create and execute crew situational awareness through a shared mental model

Luck

- **Don't count on it**