Operations: checklists

Introduction - things we'll cover

- Case studies
- Some factors that influence operations
- How to do what you need to do without forgetting anything
- Checklist types
- If we have time - you'll make a checklist!

Not covering: Go-bag gear lists - sorry!

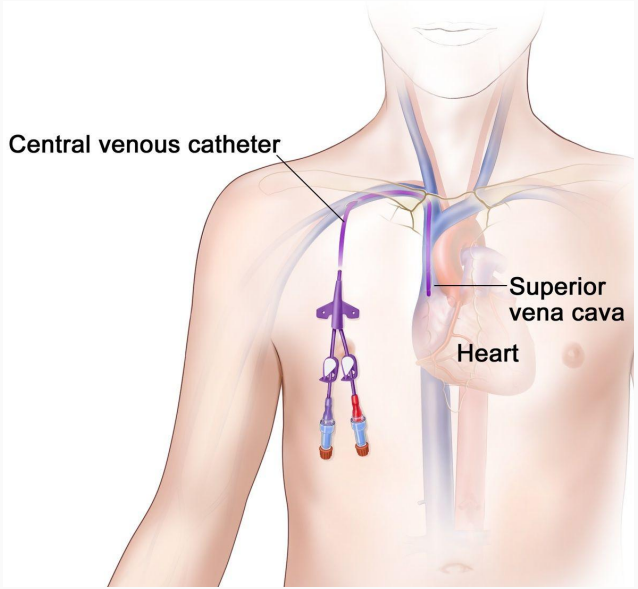
Case studies

Boeing Model 299

Michigan hospitals - central line infections

2004 - high rate of central line infections in Michigan ICUs

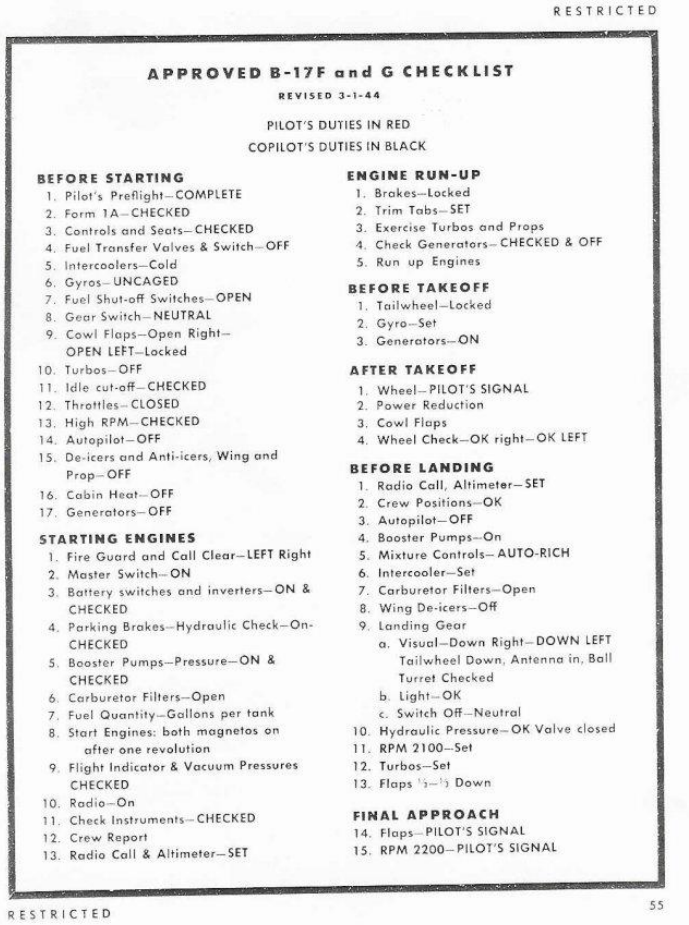
- More line infections than 75% of all US hospitals
- Poor hand washing practice
- Inadequate skin cleansing
- Rushed or inadequate draping prior to inserting lines



So, what happened?

A bunch of test pilots fixed the problem

- Did **not** require additional pilot training **nor** aeroplane mods
- Model 299 flew 1.6 million test miles without one accident
- US Army ordered 13,000 units
- Designated: Boeing B-17
- Victory in Europe
- **How?** Created a pilot checklist



RESTRICTED

APPROVED B-17F and G CHECKLIST

REVISED 3-1-44

PILOT'S DUTIES IN RED

COPILOT'S DUTIES IN BLACK

BEFORE STARTING

1. Pilot's Preflight—COMPLETE
2. Form 1A—CHECKED
3. Controls and Seats—CHECKED
4. Fuel Transfer Valves & Switch—OFF
5. Intercoolers—Cold
6. Gyros—UNCAGED
7. Fuel Shut-off Switches—OPEN
8. Gear Switch—NEUTRAL
9. Cowl Flaps—Open Right—OPEN LEFT—Locked
10. Turbos—OFF
11. Idle cut-off—CHECKED
12. Throttles—CLOSED
13. High RPM—CHECKED
14. Autopilot—OFF
15. De-icers and Anti-icers, Wing and Prop—OFF
16. Cabin Heat—OFF
17. Generators—OFF

STARTING ENGINES

1. Fire Guard and Call Clear—LEFT Right
2. Master Switch—ON
3. Battery switches and inverters—ON & CHECKED
4. Parking Brakes—Hydraulic Check—On-CHECKED
5. Booster Pumps—Pressure—ON & CHECKED
6. Carburetor Filters—Open
7. Fuel Quantity—Gallons per tank
8. Start Engines: both magnetos on after one revolution
9. Flight Indicator & Vacuum Pressures CHECKED
10. Radio—On
11. Check Instruments—CHECKED
12. Crew Report
13. Radio Call & Altimeter—SET

ENGINE RUN-UP

1. Brakes—Locked
2. Trim Tabs—SET
3. Exercise Turbos and Props
4. Check Generators—CHECKED & OFF
5. Run up Engines

BEFORE TAKEOFF

1. Tailwheel—Locked
2. Gyro—Set
3. Generators—ON

AFTER TAKEOFF

1. Wheel—PILOT'S SIGNAL
2. Power Reduction
3. Cowl Flaps
4. Wheel Check—OK right—OK LEFT

BEFORE LANDING

1. Radio Call, Altimeter—SET
2. Crew Positions—OK
3. Autopilot—OFF
4. Booster Pumps—On
5. Mixture Controls—AUTO-RICH
6. Intercooler—Set
7. Carburetor Filters—Open
8. Wing De-icers—Off
9. Landing Gear
   a. Visual—Down Right—DOWN LEFT Tailwheel Down, Antenna in, Ball Turret Checked
   b. Light—OK
   c. Switch Off—Neutral
10. Hydraulic Pressure—OK Valve closed
11. RPM 2100—Set
12. Turbos—Set
13. Flaps ½—½ Down

FINAL APPROACH

14. Flaps—PILOT'S SIGNAL
15. RPM 2200—PILOT'S SIGNAL

RESTRICTED

55

A critical care specialist fixed the problem

2004 - Doctors had to follow this checklist:

- ❑ Wash their hands with soap
- ❑ Wear a mask, hat, sterile gown and gloves
- ❑ Clean patient's skin with chlorohexidine antiseptic
- ❑ Sterile drapes over the entire patient
- ❑ Put a sterile dressing over insertion site once catheter is in

Nonconformance? Nurse given authority to halt the procedure

Up to 2004: >11 percent infection rate

End of 2006: 0%. Estimated - 1500 lives saved in Michigan

Are we there yet?

CARES today

In the last 18 months, CARES has:

- Accumulated and developed significant know-how
- Promoted a learning culture:
  - Result: motivated and skilled AUXCs
- Made some headway with process and procedures

However, we make operational mistakes

- Why is this?
- What are our fallibilities?

As Auxiliary Communicators (AUXC) ...

Emergency communications is not our day job:

- Time to train is scarce BUT there's a lot to learn and practice
- The emcomm big picture is often unclear!
- Radio is our hobby - not all skills transfer to emcomm
  - Tinkering/ragchewing/contesting ↛ emcomm ready
- Process and procedure can seem like busy work
  - Boring to learn, BUT - it is really important

Two (very misunderstood) words - can you guess?

The state of not knowing something:

- Ever increasing volumes of knowledge
- **There are things we just don't know** (yet)
- Our understanding is often incomplete

The state of knowing something but failing to apply it correctly:

- Emcomm is complex
- Incidents, even exercises, can be stressful
- We may not apply what we know correctly (or at all)
- Entrenched bad habits
- **Most failures occur in this state**

Incident chaos can impact our performance

We may be the best trained AUXC in camp, but

Unfamiliar environment + task loading + noise leads to:

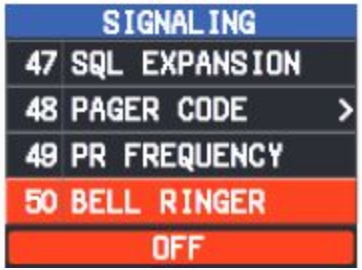
- Stress, anxiety, nervousness
- Attention narrowing

Leads to fallibility of memory and diminished training recall

Checklists can guide us

First, what checklists are **not**

- A substitute for training
  - Training precedes exercise or operational deployment
  - Can be a training tool - may need training to run a checklist
- HOW-TO documents
  - How-to documents are in-depth, heavy on the details
  - For example:
    - A standard radio configuration.
    - Menu item by menu item
- Optional
  - Always run your checklists
  - More haste, less speed



So, what is a checklist?

Checklists are:

- Developed in advance of an incident
- Specific to a well understood process or situation
- A complete, but short sequence of reminders

Runs from a **pause point** in an incident, for example:

- Pre-departure for an incident
- Arrival at your operating location
- Before sending first Winlink message - system setup check

Pause points?!?

Natural transitions in a process

Pause before embarking on the next step, for example:

- Before deployment to fixed operating location or mobile observation
- Arrival at fixed operating location - before entering
- Before start of radio operation
  - Pre-op station equipment and stationery check
- Before sending first Winlink form of shift
- Before handing over station to the next shift
  - Complete documentation
  - Brief the next shift's operator
- Before demob

What checklists might benefit your subunit?

Checklist types

READ - DO

- Read each item on the list
- Complete the task immediately before moving on
- Step-by-step like a recipe
- High-risk situations

DO - CONFIRM

- Complete tasks from memory
- Confirm that all tasks have been done before moving on
- Low-risk situations

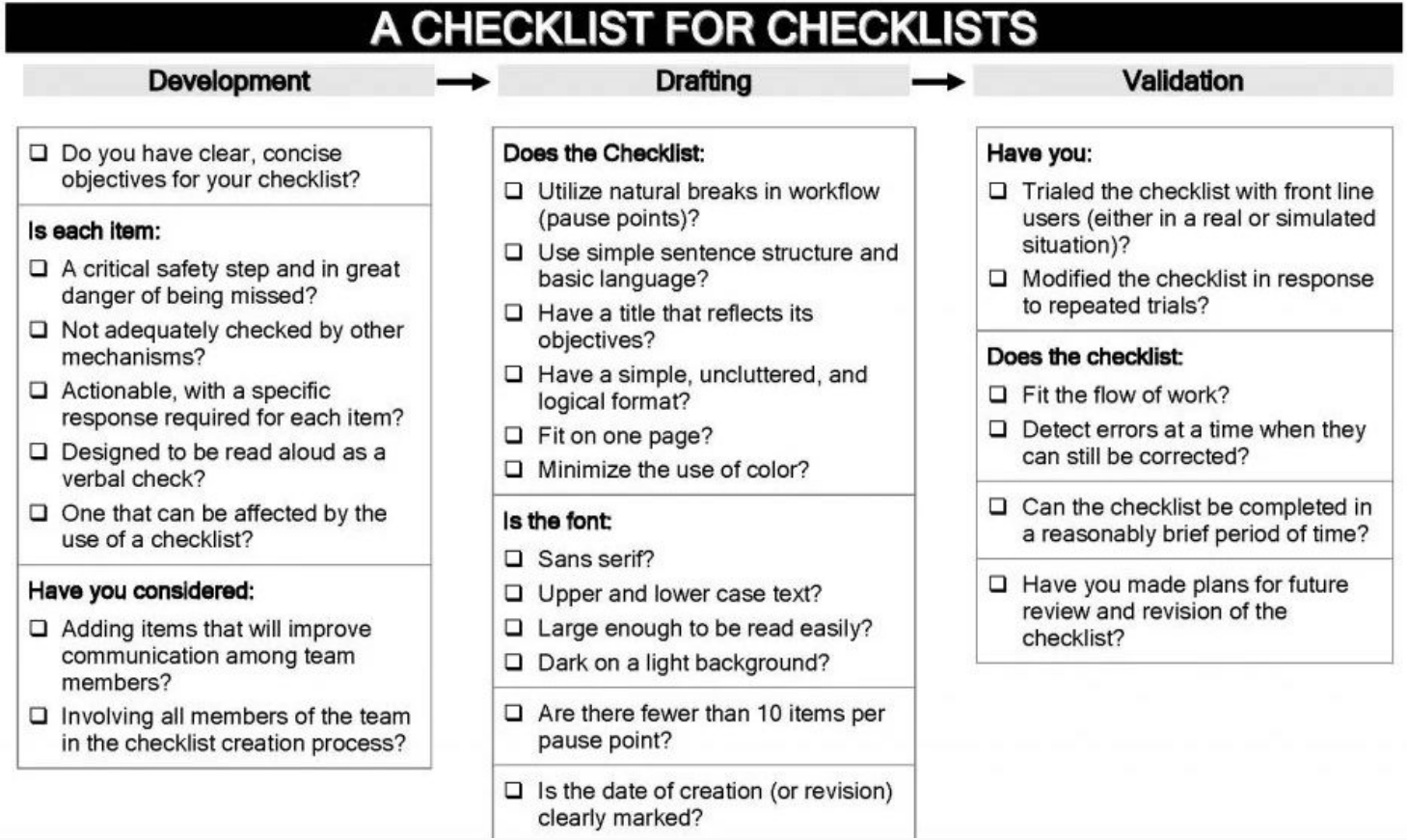
Checklist structure

- One page
- Aim for no more than nine check items
- Well crafted - short, unambiguous reminders
- If including instructions, pare down to a bare minimum

Example: Oregon county to county exercise

Item	3rd party	Mode	Complete
Sign in on station ICS-211	N/A	N/A	☑️
Start personal ICS-214	N/A	N/A	☑️
Kenwood TM-V71A configuration check	N/A	N/A	☑️
Monitor AEC's briefing at 0900	CARES EC	Phone (CLAC 7)	☑️
Run Shared Winlink Instance checklist	N/A	N/A	☑️
General field status report for NW quadrant	CLAC-EOC	VARA FM Winlink	☑️
General field status report for SE quadrant	CLAC-EOC	VARA FM P2P	☑️
Five to ten ICS 213s. Include weather report and resource requests.	CLAC-EOC	VARA FM Winlink Packet Winlink AREDN Winlink	☑️ ☑️ ☑️
Image of team at station 214	CLAC-EOC	AREDN Winlink	☑️
ICS-309 - PDF and CSV formats	CLAC-EOC, LOS-COML	VARA FM Winlink	☑️

Validate your checklists



A CHECKLIST FOR CHECKLISTS

Development → Drafting → Validation

Development

- ❑ Do you have clear, concise objectives for your checklist?

Is each item:

- ❑ A critical safety step and in great danger of being missed?
- ❑ Not adequately checked by other mechanisms?
- ❑ Actionable, with a specific response required for each item?
- ❑ Designed to be read aloud as a verbal check?
- ❑ One that can be affected by the use of a checklist?

Have you considered:

- ❑ Adding items that will improve communication among team members?
- ❑ Involving all members of the team in the checklist creation process?

Drafting

Does the Checklist:

- ❑ Utilize natural breaks in workflow (pause points)?
- ❑ Use simple sentence structure and basic language?
- ❑ Have a title that reflects its objectives?
- ❑ Have a simple, uncluttered, and logical format?
- ❑ Fit on one page?
- ❑ Minimize the use of color?

Is the font:

- ❑ Sans serif?
- ❑ Upper and lower case text?
- ❑ Large enough to be read easily?
- ❑ Dark on a light background?

- ❑ Are there fewer than 10 items per pause point?
- ❑ Is the date of creation (or revision) clearly marked?

Validation

Have you:

- ❑ Trialed the checklist with front line users (either in a real or simulated situation)?
- ❑ Modified the checklist in response to repeated trials?

Does the checklist:

- ❑ Fit the flow of work?
- ❑ Detect errors at a time when they can still be corrected?

- ❑ Can the checklist be completed in a reasonably brief period of time?
- ❑ Have you made plans for future review and revision of the checklist?

Finale: let’s draft a READ - DO checklist

Your task:

- Work with your subunit members
- For phone radio operators
- Pause point:

  Arrival at a fixed operating location for shift change
  - EOC
  - Fire station
  - Wherever is meaningful for your subunit