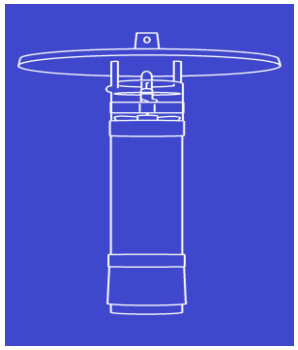


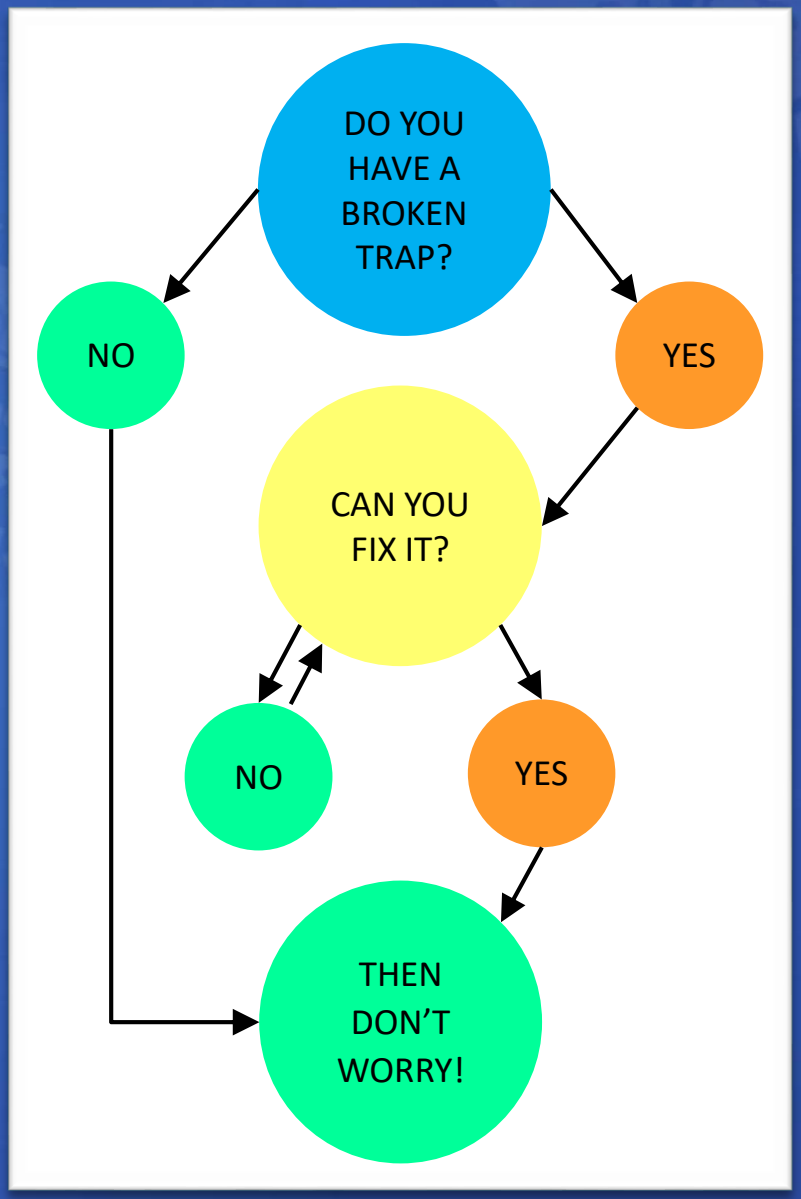
This Old Trap

Repairing Equipment In-House

Daniel Sherwood
Fairfax County Health Department
VMCA Annual Meeting
January 28, 2020

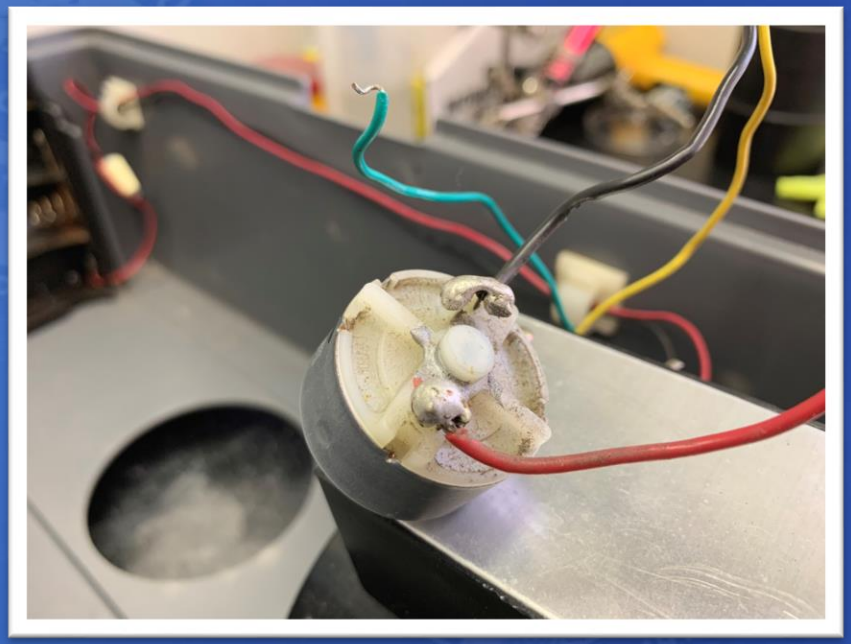
Why build a trap repair program?

- Are your traps getting older?
- Trap repair person vs. trap repair program?
- Who are you accountable to?
- What does it cost?
  - CDC Mini ~$150
  - Replacement motor ~$12
  - Repair at <10% of cost
  - Economy of scale
- Traps are going to break



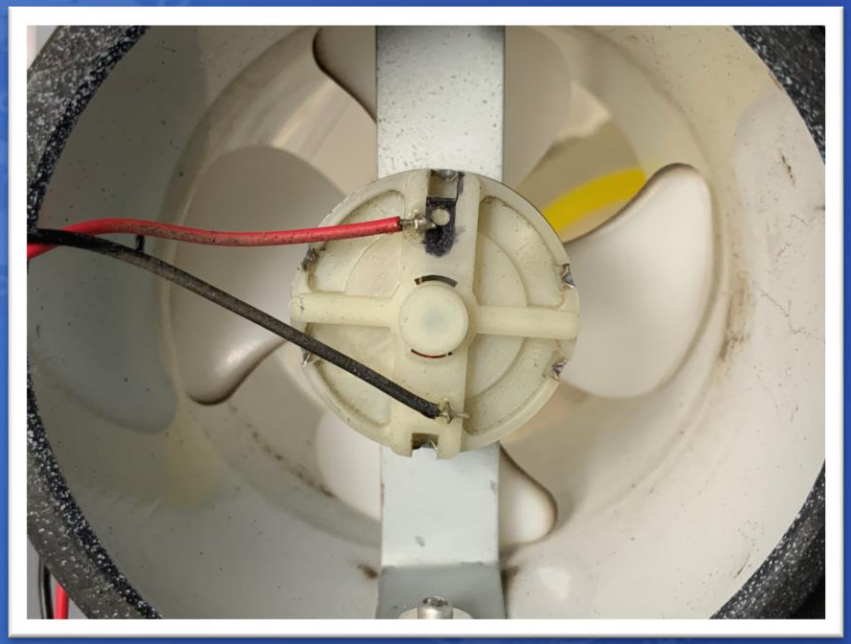
In-House repair costs & benefits

- When to replace vs. when to repair
  - Replacement costs?
  - Service life of trap?
  - Program limitations?
- Quality assurance
  - Reduce trap fails
  - Extend service life
- In-house expertise
  - Troubleshooting
  - Turnaround time



In-House repair costs & benefits

- Time
  - In-house vs. send out
  - Warranties or contracts?
  - Backorders in busy years
- Transferable skill
  - Applies to more than traps
  - PM lab equipment
- Intrinsic value
  - Learning & problem-solving can be satisfying
  - Just plain cool



Considerations

- Do you want to make any modifications?
  - What suits your program?
  - What didn't work last season?
- Do you have the necessary supplies?
  - KEEP EVERYTHING!!!
  - Call your sales reps.

Considerations

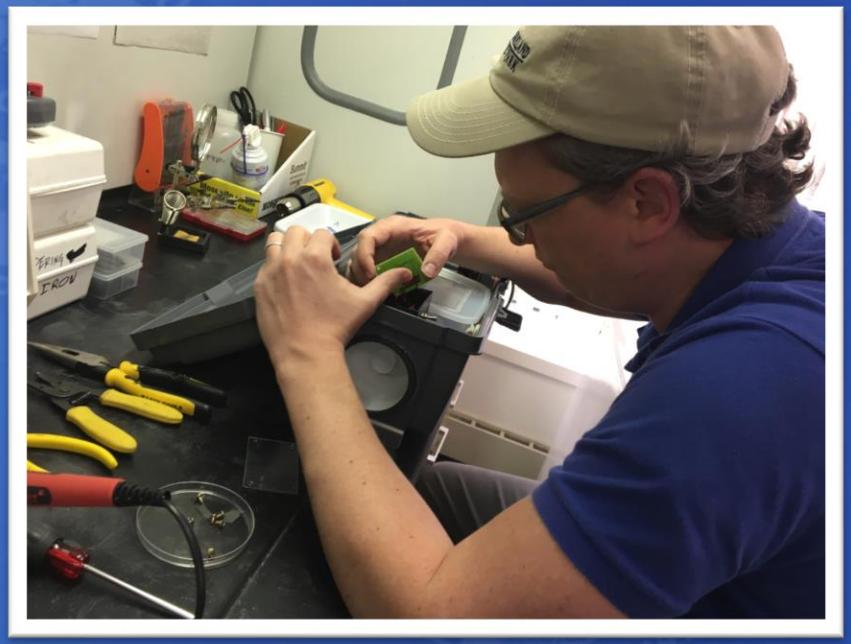
- Can you build a trap from spare/new components?
  - One thing you shouldn't reuse
  - Keep stock of motors
- Do you have the necessary tools?
  - In-house repair frees up budget
  - You need the right tool for the right job

Considerations

- Do you have the time?
  - Major repairs/PM/stress tests
  - Do you have the time to reset failed traps?
- Have you practiced?
  - Allot time and resources to practice/experiment
  - Recognize previous repair efforts (good & bad)
  - Don’t forget your PPE!

Repair Process

- Get the easy repairs done first
- Troubleshooting supplies
  - Charged battery
  - Quality multimeter
- Teardown/rebuild one trap type at a time
  - Create an assembly line (great for training)
  - Check your work
- Revel in your own magnificent accomplishment



#traprepair #bossmoves

Repair Objectives

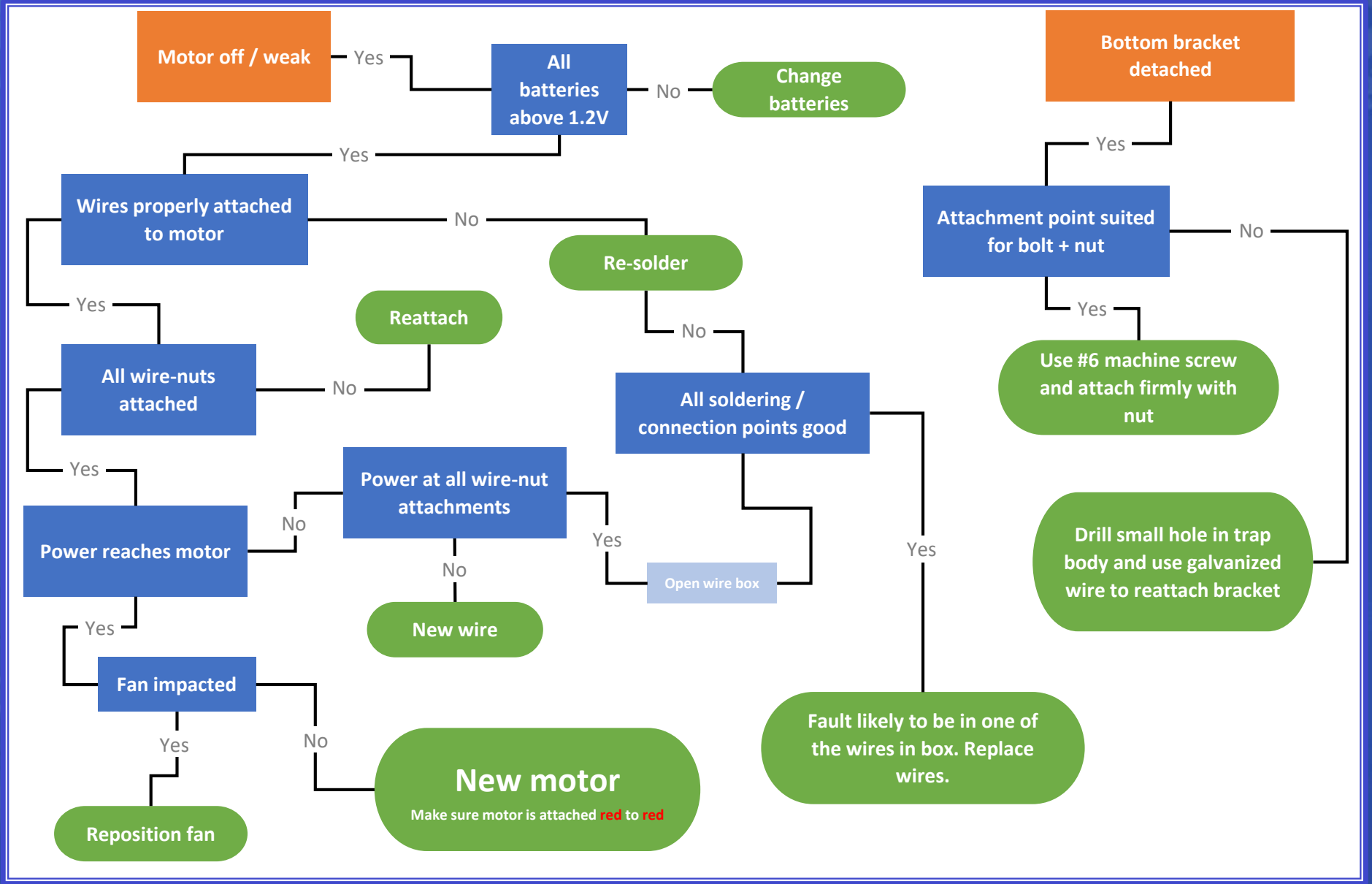
Repair whole trap?

- Pros
  - No need to trouble shoot
  - Like new when its finished
  - Eliminates Faulty equipment
- Cons
  - Time consuming
  - Requires spare parts and more tools

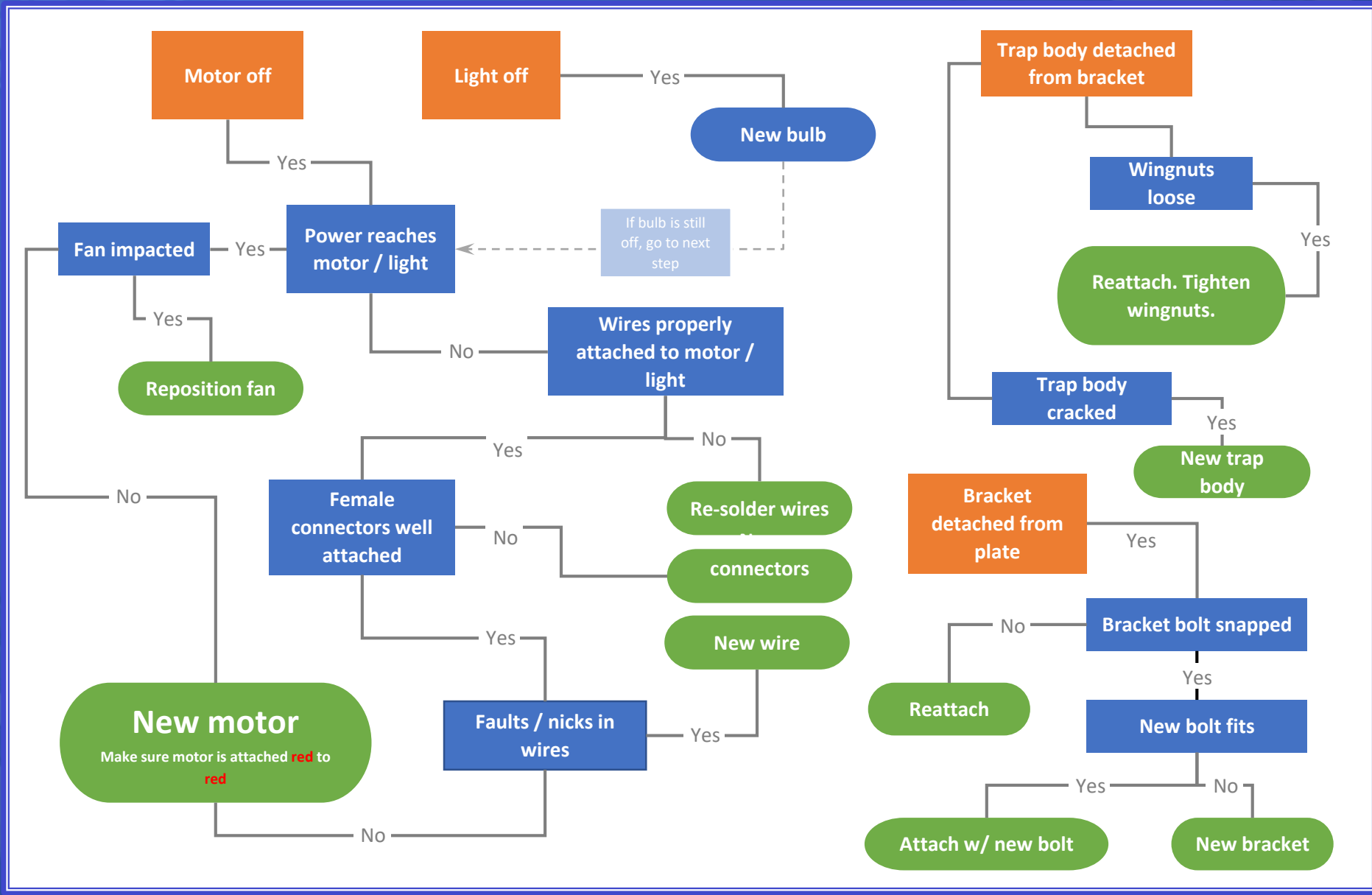
Repair faulty component?

- Pros
  - Rapidly deployable
  - Often simple fixes = less time consuming
- Cons
  - Must trouble shoot
  - Might fail again (at repair point or somewhere else)

Trap Repair – Gravid Flowchart



Trap Repair – CDC Flowchart



Freebies – Start simple

Crimping pliers

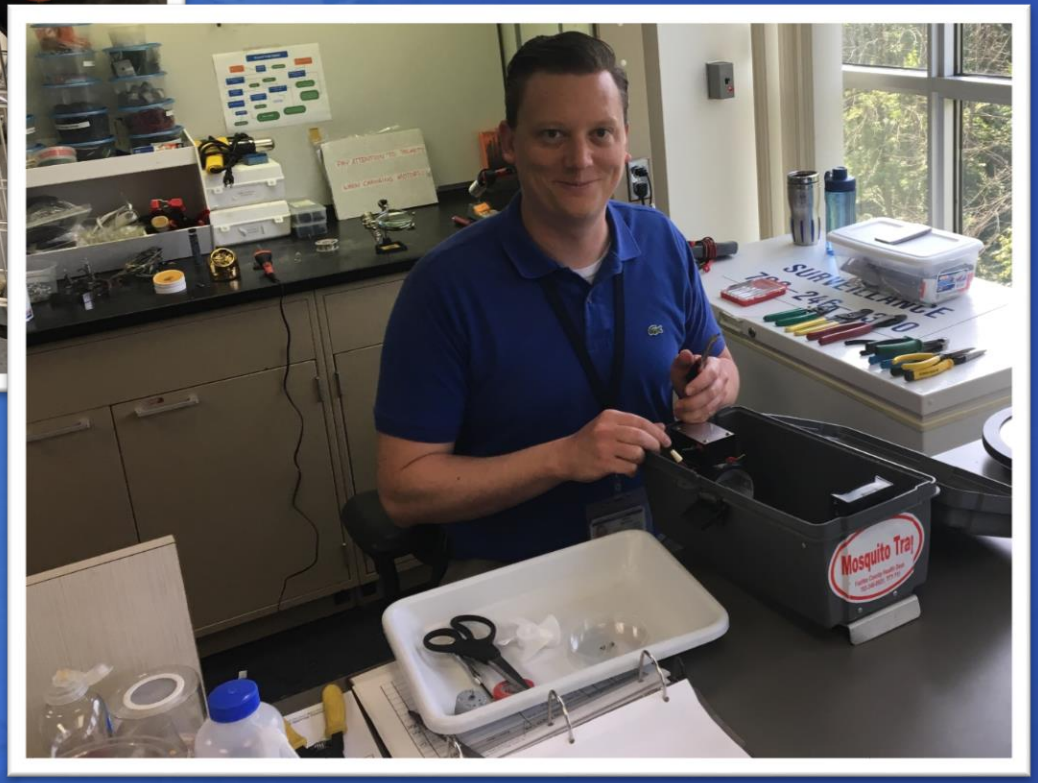
Wire cutter/stripper

Needle nose pliers

Soldering iron

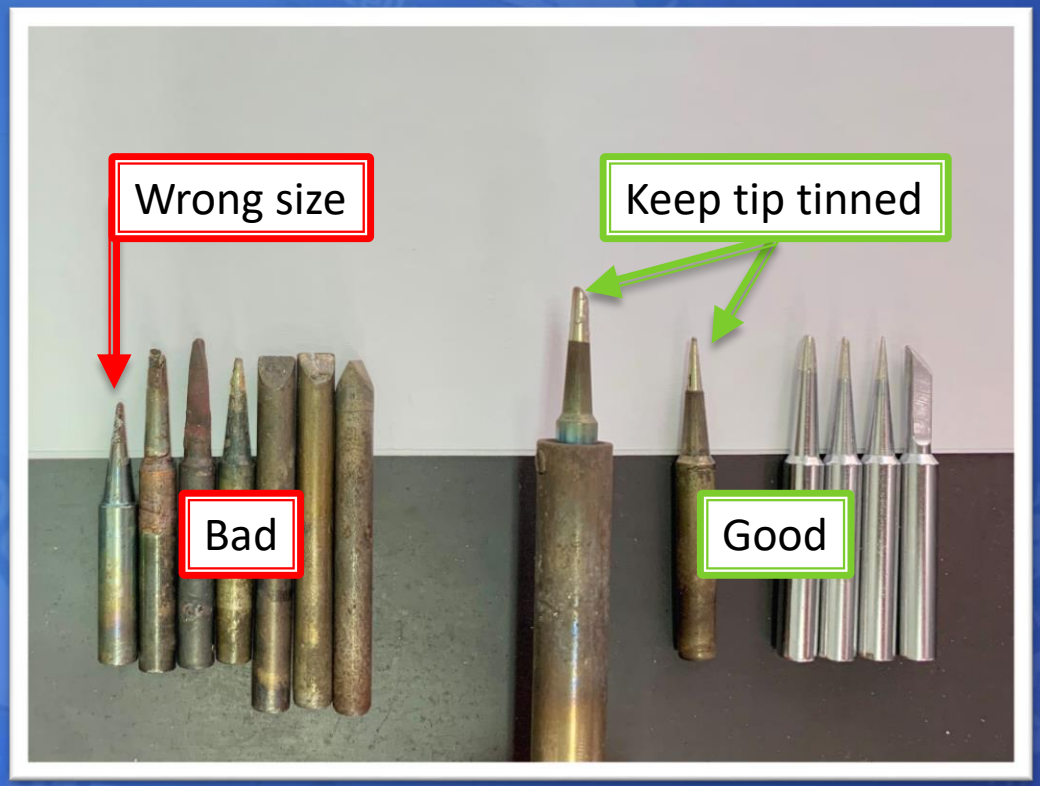
Freebies – Be creative & build gradually

Freebies – Keep a clean workspace



Freebies – Soldering

- Create a hot iron reminder
- Turn off/unplug when not in use
- Correct iron for the job



Freebies – Soldering

- PPE
  - Safety glasses
  - Gloves
  - Ventilation

Freebies – Soldering

Soldering iron stand with solder sponge

Tip cleaner

Organic flux

Desoldering pump

PPE

Work plate

Electrical solder

Soldering iron

Scraping tool

Assorted soldering tips

Resources

- Tools
  - https://wrenchguru.com/
  - https://www.kmstools.com/blog/
  - https://www.wonkeedonkeetools.co.uk/
  - http://www.technologystudent.com/equip1/equipex1.htm
- Soldering
  - http://www.paceusa.com/pacenter/videos
  - https://www.weller-tools.com/how-to-use-soldering-iron/
  - https://www.youtube.com/channel/UCT5e-XjqHPfA3_9wF3CgY1w
- Where else can you turn for help?

Final Thoughts

"Any way you slice it, a trap fail is lost data or lost resources. Doing good trap repair can save both in the long run." **– Not a quote by Bob Villa**