

PRESERVING INSTITUTIONAL MEMORY IN A UTILITY

*Brian Gongol
DJ Gongol & Associates, Inc.
June 3, 2015*

*Iowa WEA Annual Conference
Ames, Iowa*

What is "institutional memory"?

Books contain formal knowledge



The built environment stores knowledge, too



Institutional memory is different

It's what your organization knows because of its people



How institutional memory leaks out



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Retirements

Illnesses and injuries



Employee departures



Entropy



Other losses



Test your individual memory

Answer these three simple questions

What's your license plate number?



What was your junior-high locker combo?



What color is your neighbor's front door?



If personal memory is that bad...

*...then we have to do something formal
to capture institutional memory*

Formal knowledge



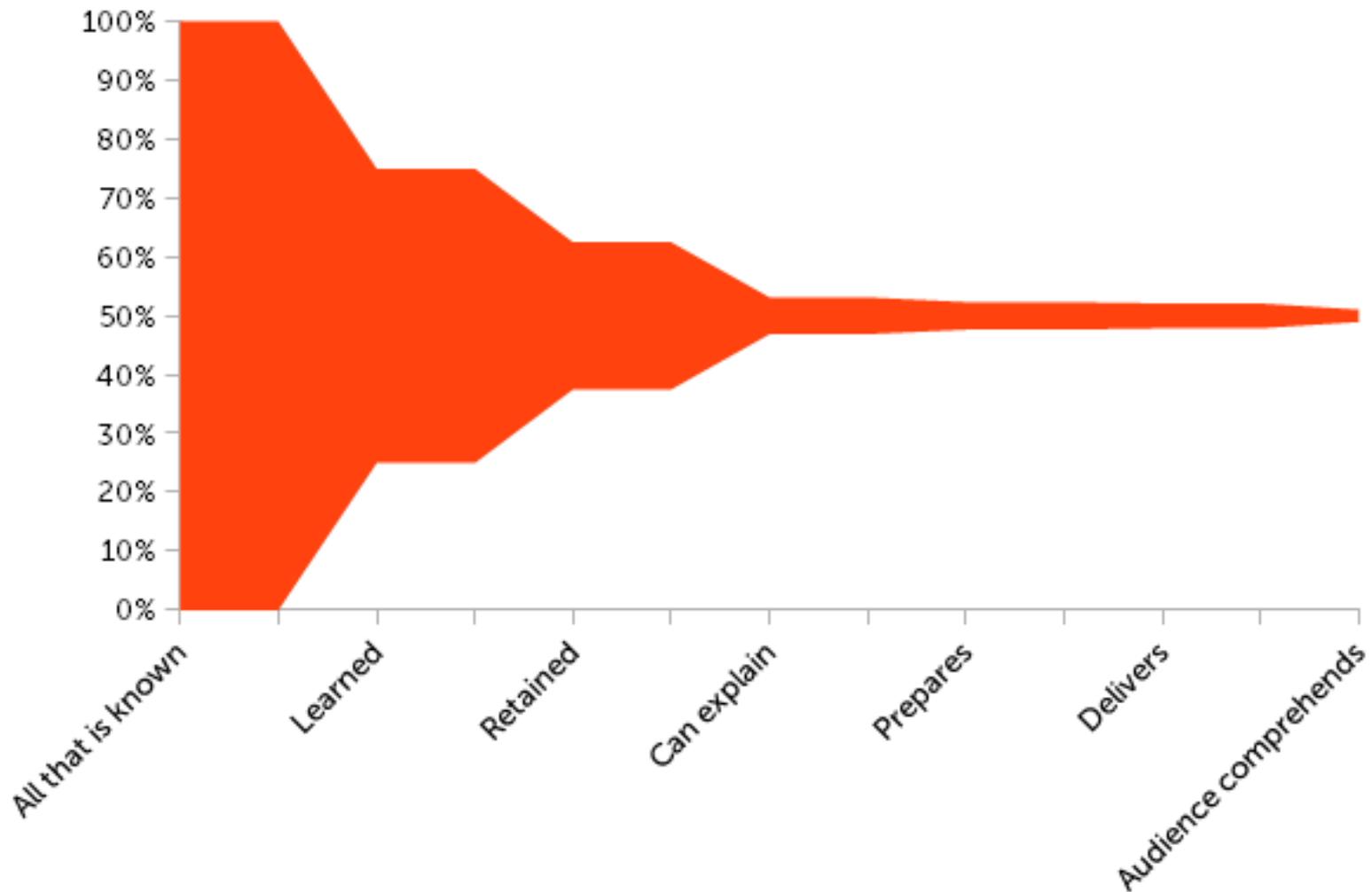
*I-235 goes from West Des Moines
to northeast Des Moines*

Institutional knowledge

*If you're going west past Windsor Heights,
get into the left lane before 42nd Street*



Funnel of knowledge



Institutional memory is dynamic

Books and the physical world are static

Institutional memory is where knowledge is synthesized with experience and becomes useful

Fixing problems of institutional memory

*Organizations are no better
than individuals at remembering...*

In general, they're even worse

Capture it in three parts

Study



LIMITED - ACCESS ACCOUNTS (8:58)

WHAT THEY ARE Document

HOW THEY HELP

HOW EASY THEY ARE TO SETUP

1:24 - 1:3

11 MIN

BACKUPS (13:52)

WHY YOU NEED THEM

WHAT TO BACK UP

HOW OFTEN

DVD'S

FLASH DRIVES

PORTABLE HARD DRIVES

ONLINE BACKUPS

1:39 - 1:5

11 MIN

Use



Part 1: Study

1 2 3

Ask why

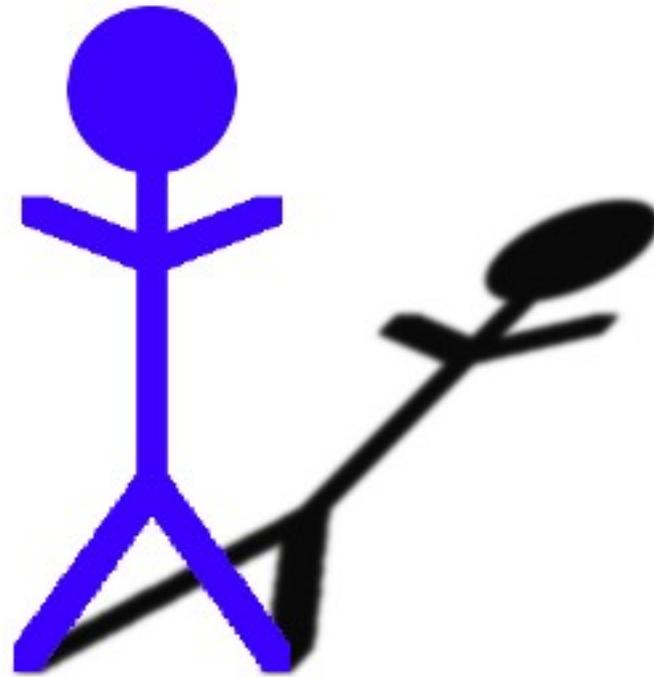
Nobody knows where the dollar sign came from



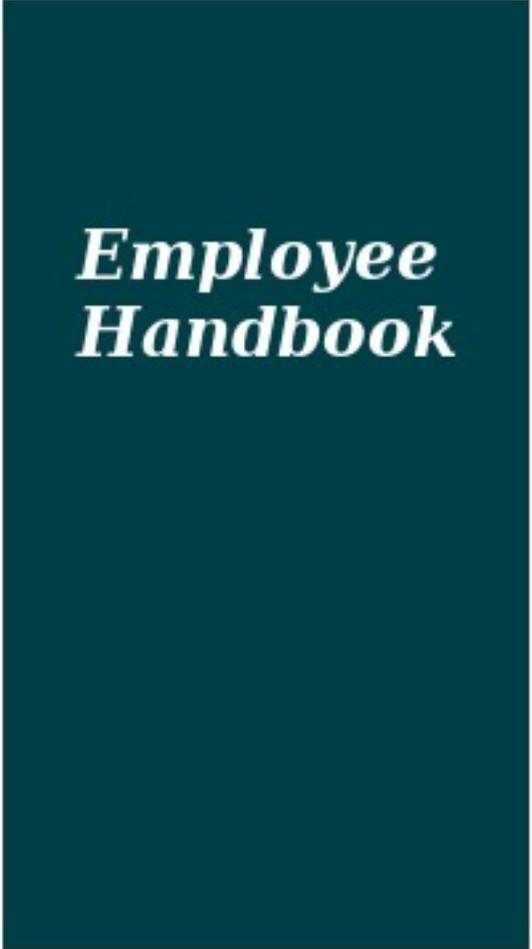
Method #1: Recruit most curious staff member



Method #2: Set up (or fake) a job shadow

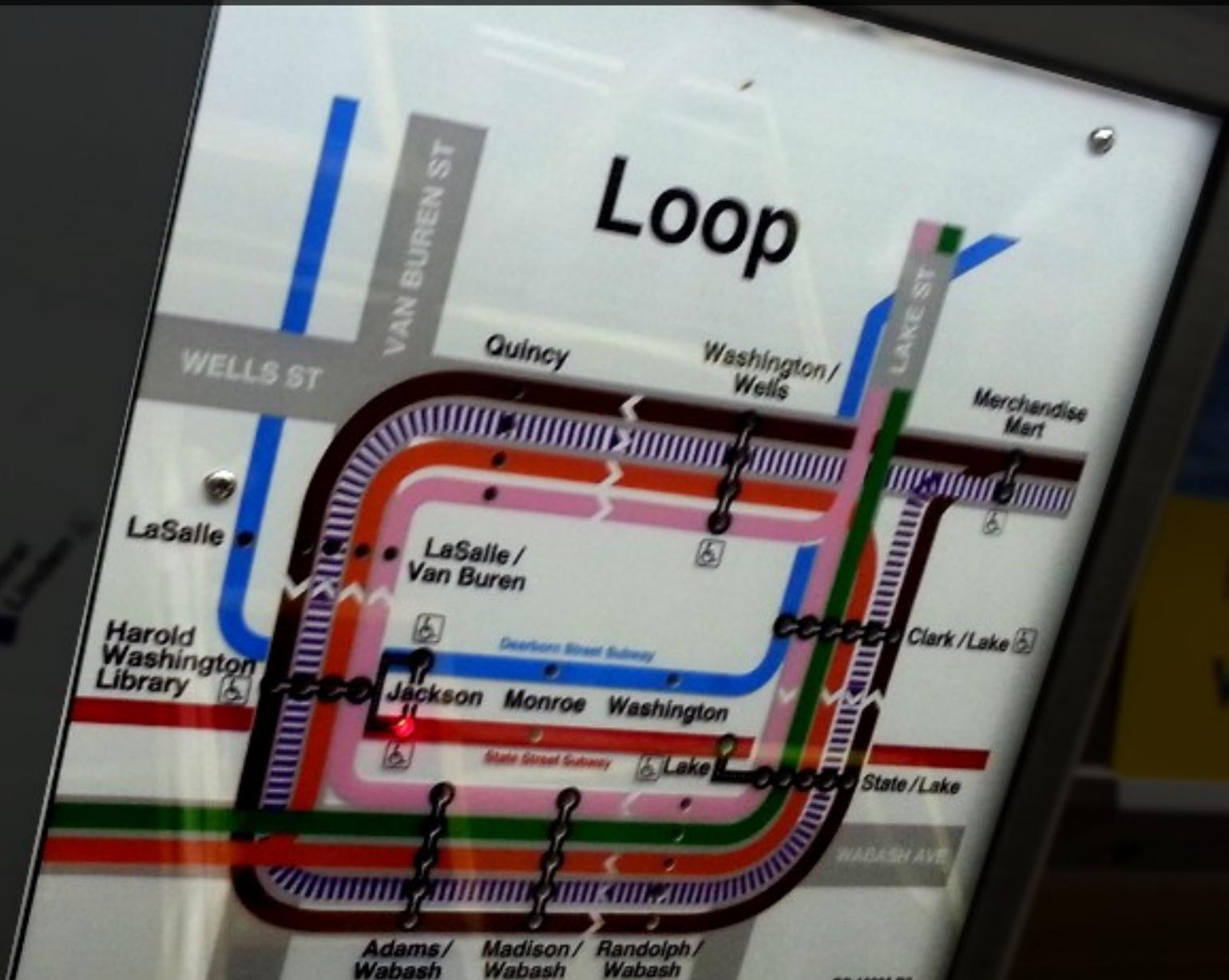


Method #3: Prepare a new-hire orientation

A dark teal rectangular box representing the cover of an Employee Handbook. The text "Employee Handbook" is centered on the cover in a white, serif font.

*Employee
Handbook*

Method #4: Prepare a process flow diagram



Method #5: Wear a glove & throw yourself off



Method #6: Wear a Go Pro for a day



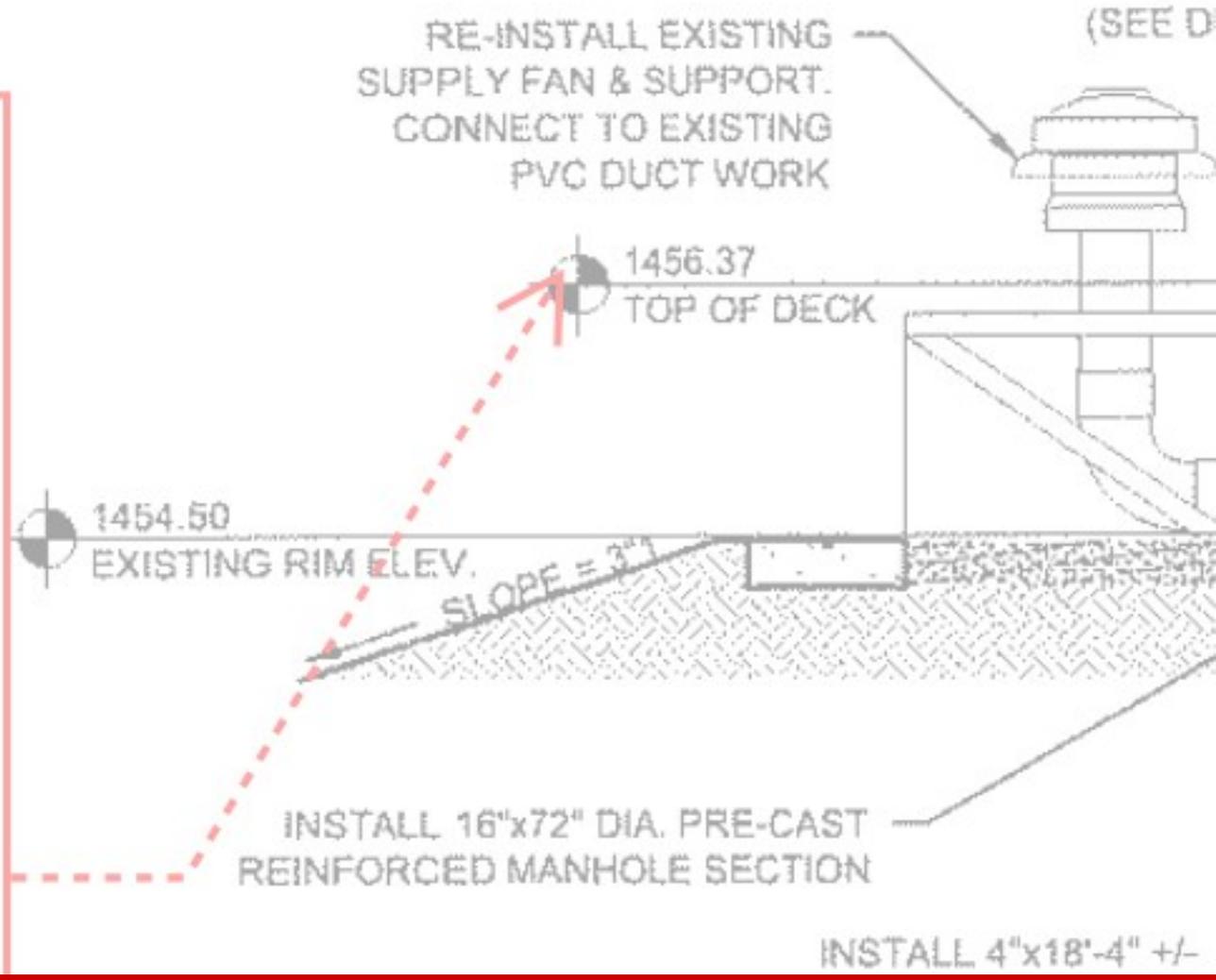
** GoPro camera not included. Some duct tape required.*

Method #7: Mark up your plans and specs

BASE FLOOD ELEV. = 1455.35

Top of deck is raised by
the new top of deck
would be 1458.87'.
Waterline of suction would
approximately 2' above that,
1460.87'.

ump reprimers at the
to the static suction lift
then become (1460.87 -
) 18.33'



Every process you study has value

*If you've never done it before,
you need it explained*

Every process you study has value

*If you do it infrequently,
you need to capture the best way*

Every process you study has value

*If you do it routinely,
you need to standardize and improve*

Sometimes the study work is done for you



At least six notes posted on one machine

BUY POSTAGE STAMPS
RENEW YOUR PO BOX

TOUCH SCREEN TO BEGIN

1

2

3

4

5

6

Studying alone doesn't end frustrations

**REACH IN AND GET YOUR
POSTAGE LABEL!!**
**BE SURE AND RECEIVE ALL
POSTAGE BEFORE LEAVING.**
THANK YOU!

 **LABELS**

READ!!

TAP HERE IF YOU DO NOT
RECEIVE POSTAGE!

 **POSTAGE**

LOOK ALL THE WAY IN
POSTAGE IS VERY SMALL TO SEE

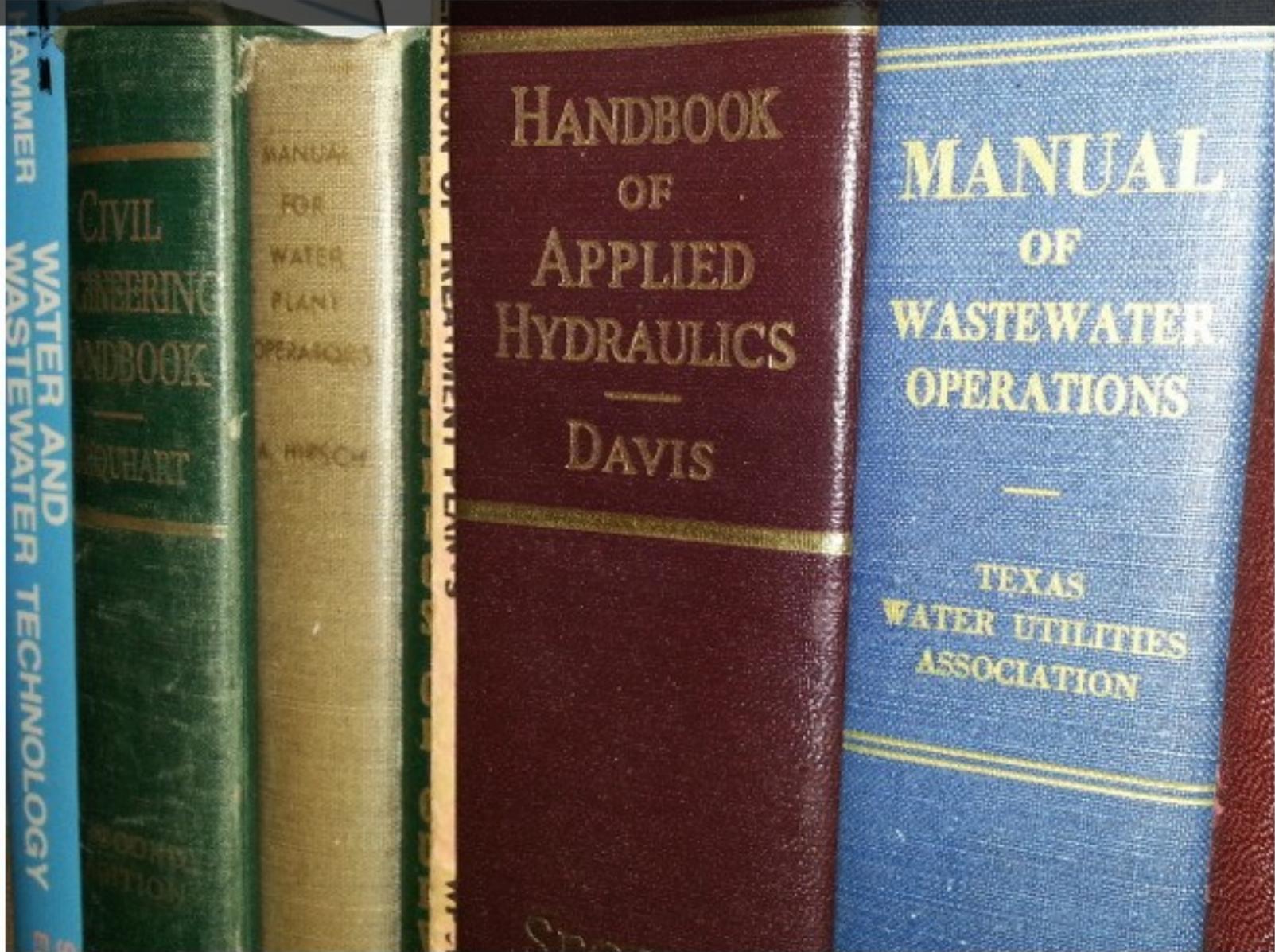
Part 2: Document

1 2 3

...and ask why you do what you do

DO NOT DO WHAT IS
ALREADY DONE

Document what works



Document what doesn't work, too



Demolition job gone wrong



- Source: BBC News, "Turkey demolition goes wrong"
- <http://news.bbc.co.uk/2/hi/8179857.stm>
- Used with permission

Demolition job gone wrong



- Source: BBC News, "Turkey demolition goes wrong"
- <http://news.bbc.co.uk/2/hi/8179857.stm>
- Used with permission

Why is this the system we've decided to use?

- Don't judge, just document
- Knowing that a decision was made for trivial reasons is better than erroneously thinking it was a deliberate choice

What do you need to know in an emergency?

Oxygen Masks & Regulators..... ON, 100%

Crew Communications ESTABLISH

No Smoke & Seat Belt Signs ON

Continental Airlines

B737-300/500

Quick Reference Handbook

TWO ENGINE FLAMEOUT CHECKLIST

IMMEDIATE ACTION:

Start Switches..... FLIGHT

Start Levers CUTOFF

Start Levers (After EGT Decreases)..... IDLE

UNCOMMANDED RUDDER YAW OR ROLL

GO TO

ENGINES & APU

GO TO

Don't miss hidden indicators



Capture three types of memory

Event memories

What happened?

Decision memories

Why did you do what you did?

Process memories

What steps lead to others?

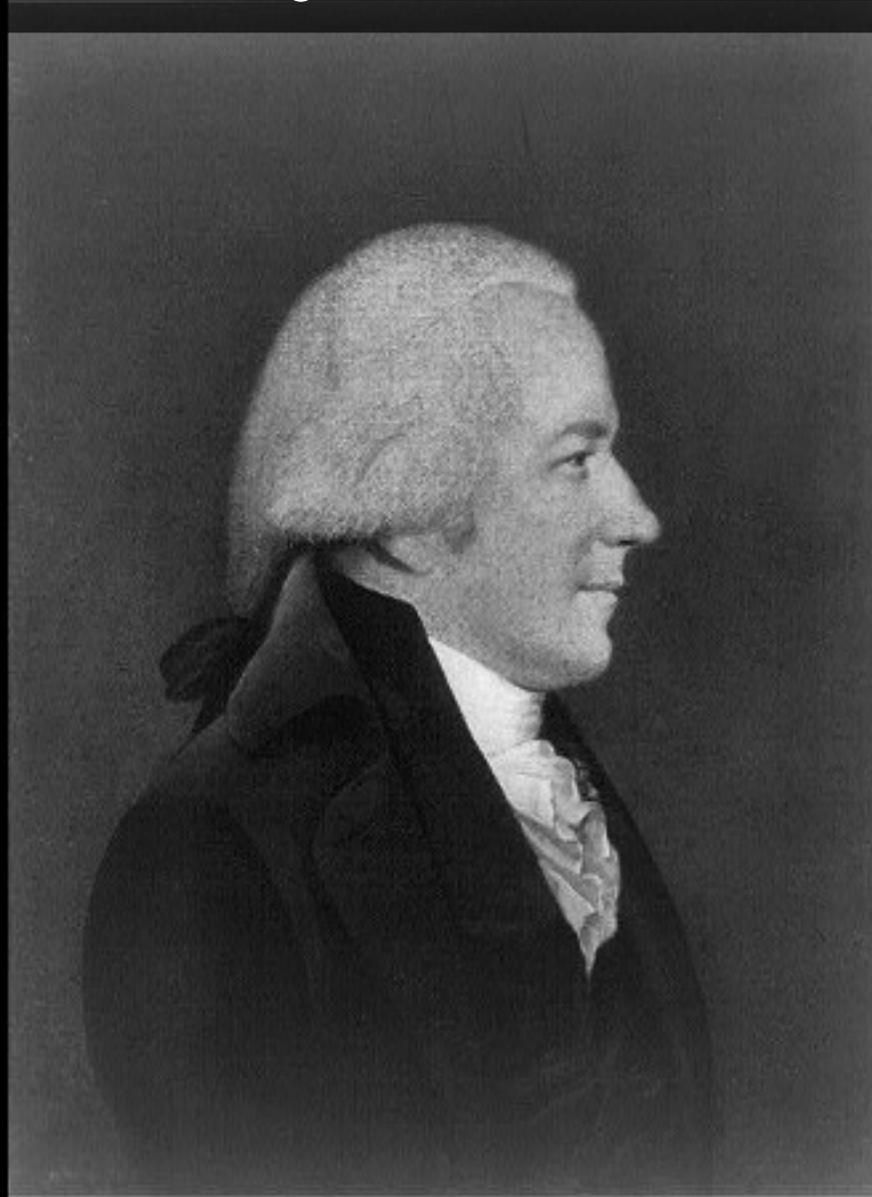
Memoirs

- Most autobiographies are just memoirs -- what happened
- The useful ones introduce decision memories: "Why I did it"
- Good biographies introduce the process, but rarely encompass decision memory

Event memory: History books

CELEBRATING 50 YEARS OF A
PROFITABLE PARTNERSHIP

Decision memory: The Federalist Papers



Process memory: Recipe books

106

THE NEWLYWED COOKBOOK

Roasted Chilean Sea Bass with Parsnips and Red Onion

The firm, wonderfully white flesh of Chilean sea bass is excellent with caramelized parsnips and onion. The parsnip-onion mixture is so awesome, any meat, fish, or poultry would make a great partner!

1. Preheat oven to 450°F.
2. In a large bowl, combine parsnips, onion, oil, sugar, ½ teaspoon of the salt, and ¼ teaspoon of the pepper. Toss to combine. Transfer mixture to a shallow roasting pan that has been coated with non-stick spray. Place pan in oven and roast 20 minutes, stirring halfway through cooking time.
3. Meanwhile, season both sides of bass with rosemary and remaining ½ teaspoon of salt and ¼ teaspoon of pepper.
4. Remove pan from oven and arrange bass over parsnips and onion. Spoon lemon juice over top. Return pan to oven and roast 15–20 minutes, or until fish is fork-tender.

Preparation and cooking time: 50 minutes
Serves 4

NEEDED ITEMS

large bowl
shallow roasting pan
2–3 parsnips (about 1 pound total)
peeled and sliced crosswise into ½-inch thick rounds
1 red onion, quartered
1 tablespoon olive oil
1 tablespoon granulated sugar
1 teaspoon salt, divided
½ teaspoon ground black pepper
1 1 to 1½-pound Chilean sea bass
about 1½-inches thick

Why do you have to write it down?



Seek to conserve mental energy



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Routine decisions are mentally costly



Save your mental energy for big problems



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Supplemental media help, but don't store well



Blogs and wikis may help, but are on probation

WIKIPEDIA
The Free Encyclopedia

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store

Interaction

Help
About Wikipedia
Community portal
Recent changes
Contact page

Tools

What links here
Related changes
Upload file
Special pages
Permanent link
Page information
Wikidata item
Cite this page

Print/export

Create a book

Bender (*Futurama*)

From Wikipedia, the free encyclopedia

Bender Bending Rodriguez, commonly known as **Bender**, is a main character in the animated television series *Futurama*. Designated in-universe as **Bending Unit 22**, unit number 1,729, serial number 2716057,^[1] he was created by series creators Matt Groening and David X. Cohen, and is voiced by John DiMaggio. He fulfills a comic, antihero-type role in *Futurama* and is described by fellow character Leela as an "alcoholic, whore-mongering, chain-smoking gambler".^[2]

According to the character's *back story*, Bender was built in Mexico (the other characters refer to his "swarthy Latin charm"). Viewers are informed, through his own testimony, of Bender's prejudice against non-robots: His dialogue often contains anti-human expressions such as "kill all humans". Exceptions who are not subject to Bender's prejudicial attitude are those individuals on his "Do Not Kill" list, which seems to comprise only his best friend Fry and his colleague Hermes (Hermes is added after the episode "Lethal Inspection").^[3] However, Bender is also occasionally portrayed as possessing a sympathetic side, suggesting that he is not as belligerent as he claims, a view often echoed by his friends.^{[4][5]}

Contents [hide]

- Character biography
- Character

Bender Bending Rodriguez

Futurama character



Bender drinking beer and smoking a cigar

First appearance	"Space Pilot 3000"
Last appearance	"Simpsonorama" (<i>The Simpsons</i>)

You still have to get it on paper

*These books are still around
from the 1920s...*

*but good luck retrieving files
from a Commodore 64*

The writing process enforces clear thinking

Bring ideas into clearer focus

Supreme Court decisions: Written for a reason



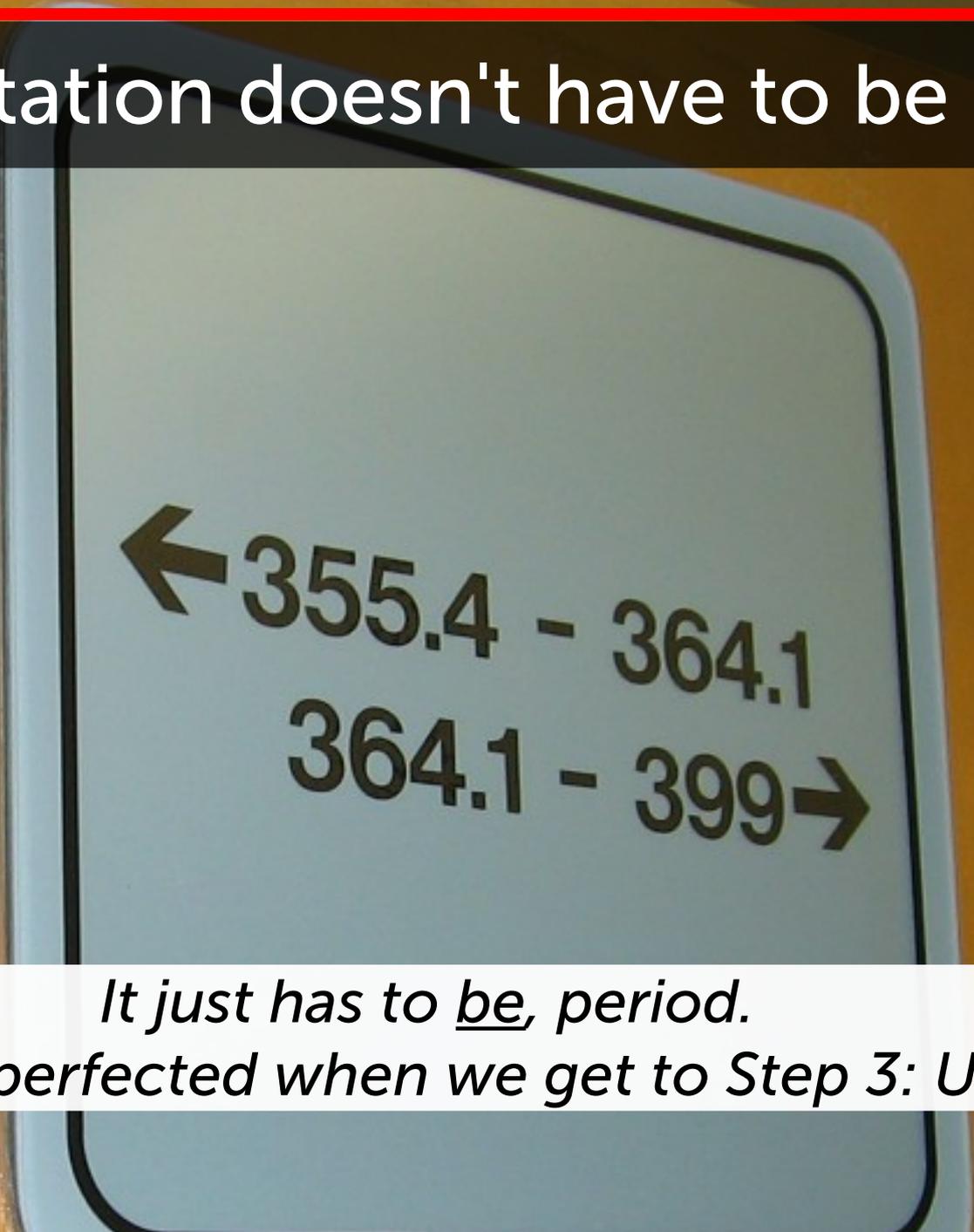
Decisions and dissenting opinions are valuable



Great teams have great playbooks



Documentation doesn't have to be perfect



← 355.4 - 364.1
364.1 - 399 →

*It just has to be, period.
It gets perfected when we get to Step 3: Use.*

Know the recipe for your plant's secret sauce



Keep a log of your vendors

- And regularly ask for updated linecards

Record why you bought what you did

Cambria 10 fx Σ = Highlander

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Consider	Make	Model	Engine	Size	HP	Curb wt	HP/wt	Seats	W'base	Length	Width	Cargo c
2	Y - final cut	Chevrolet	Venture 2004	V6 gas	3.4 L	185	3699	0.050	8	112	186.9	72.0	84
3	Y - final cut	Toyota	Highlander	V6 gas	3.5 L	270	4045	0.067	7	110	188.4	75.2	42
4	Y - final cut	Honda	Pilot	V6 gas	3.5 L	250	4299	0.058	8	109	191.4	78.5	47
5	Y - final cut	Ford	Explorer	V6 gas	3.5 L	290	4557	0.064	7	113	197.1	78.9	43
6	Y - final cut	Ford	Edge	V6 gas	3.7 L	305	4056	0.075	5	111	184.2	76.0	32
7	Y - final cut	Ford	Edge	V6 gas	3.5 L	285	4056	0.070	5	111	184.2	76.0	32
8	Y - final cut	Chevrolet	Impala	V6 gas	3.8 L	200	3465	0.058	5	111	200.0	73.0	
9	Y	Jeep	Grand Cherokee	V8 gas	5.7 L	360	4470	0.081	5	115	189.8	76.3	
10	Y	Dodge	Journey	V6 gas or E85	3.6 L	283	3818	0.074	7	114	192.4	72.2	
11	Y	Dodge	Journey	V6 gas or E85	3.6 L	283	3818	0.074	5	114	192.4	72.2	
12	Y	Dodge	Journey	V6 gas	3.6 L	283	3818	0.074	7	114	192.4	72.2	
13	Y	Dodge	Journey	V6 gas	3.6 L	283	3818	0.074	5	114	192.4	72.2	
14	Y	GMC	Yukon	V8 gas or E85	6.2 L	403	5505	0.073	9	116	202.0	79.0	
15	Y	GMC	Terrain	V6 gas or E85	3.0 L	264	3853	0.069	5	113	185.3	72.8	
16	Y	GMC	Terrain	V6 gas	3.0 L	264	3853	0.069	5	113	185.3	72.8	
17	Y	Chevrolet	Trailblazer	I6 gas	4.2 L	285	4331	0.066	5	113	191.8	74.7	
18	Y	GMC	Envoy	I6 gas	4.2 L	285	4331	0.066	5	113	191.6	74.7	
19	Y	Jeep	Grand Cherokee	V6 gas or E85	3.6 L	290	4470	0.065	5	115	189.8	76.3	
20	Y	Chevrolet	Traverse	V6 gas	3.6 L	288	4658	0.062	8	119	118.9	78.4	
21	Y	Chevrolet	Traverse	V6 gas	3.6 L	288	4658	0.062	7	119	118.9	78.4	
22	Y	GMC	Acadia	V6 gas	3.6 L	288	4730	0.061	8	119	201.0	76.0	

Name your equipment



Numbers are for prisoners

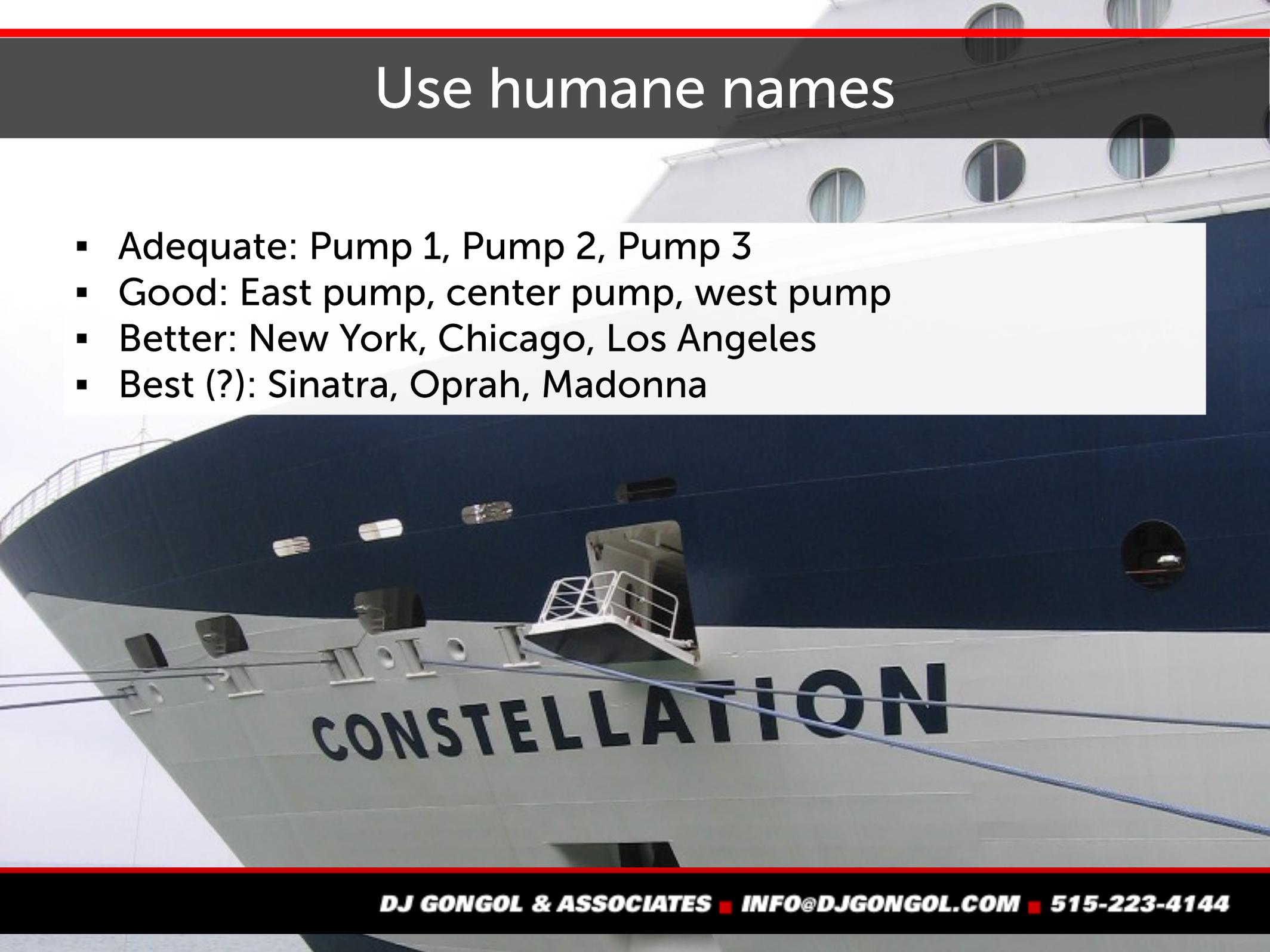
Oval Office · West Wing · White House

Not "Suite 247, 2nd Floor, 1600 Pennsylvania Avenue"



Use humane names

- Adequate: Pump 1, Pump 2, Pump 3
- Good: East pump, center pump, west pump
- Better: New York, Chicago, Los Angeles
- Best (?): Sinatra, Oprah, Madonna



CONSTELLATION

Part 3: Use

1 2 3

What can you build into a line score?

W

CLOCK

NATIONAL

ARIZONA	N																			
COLORADO	I																			
SAN FRANCISCO	T																			
LOS ANGELES	E																			
PHILADELPHIA	G																			
FLORIDA	A																			
NEW YORK	M																			
ATLANTA	E																			
10 2 MILWAUKEE	0	0	2	0	0															
6 CINCINNATI	1	0	0	0	3															
35 31 ST. LOUIS	0	0	0	0	4	0	0	0	0	4										
30 34 CUBS	0	3	0	2	0	0	0	0	0	5										
SP RP INNING	1	2	3	4	5	6	7	8	9	10										

UMPIRES
1ST 75
2ND 34
3RD 53

BATTER

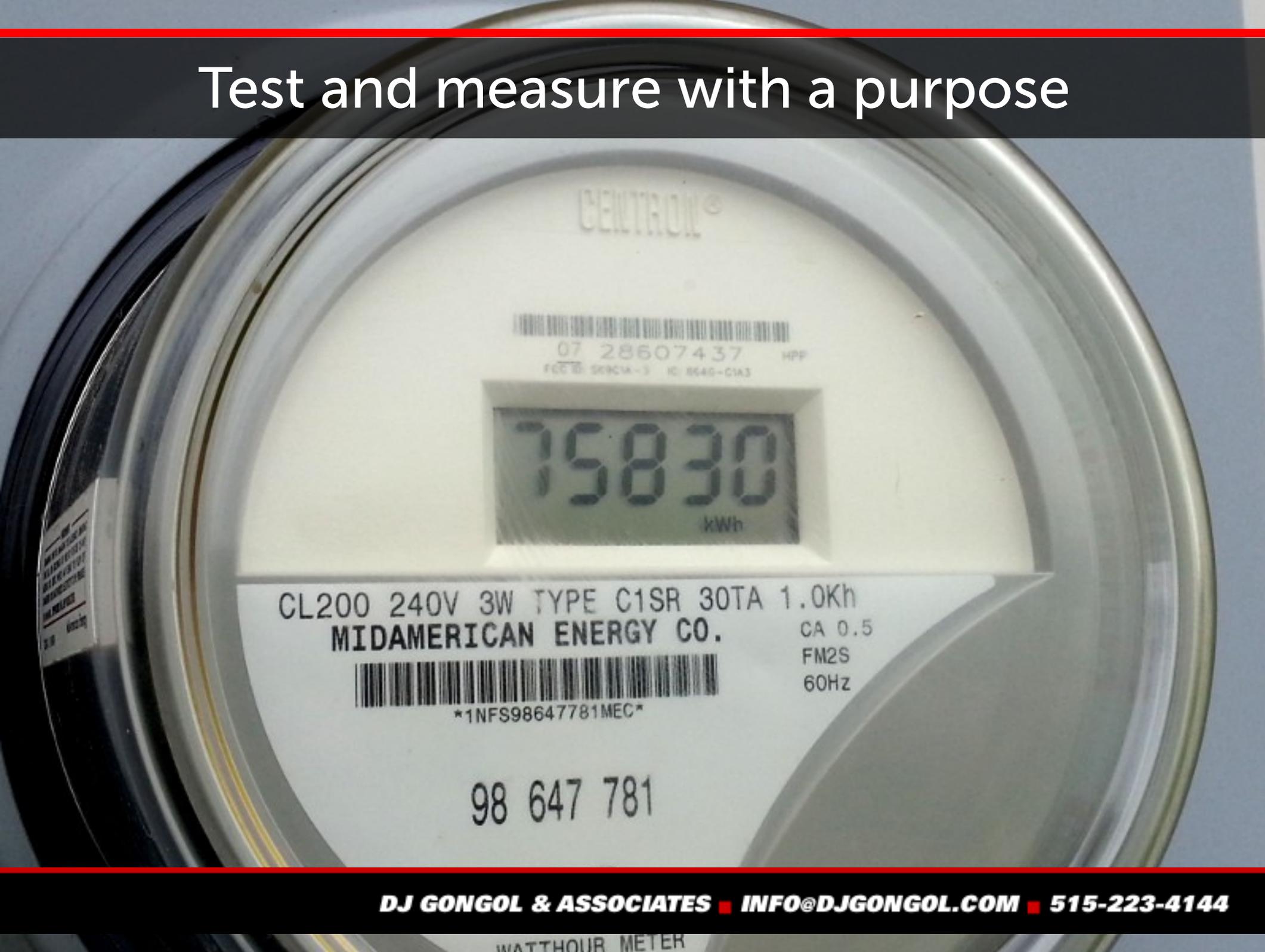
AMERICAN

LOS ANGELES	N	I	T	E	G	A	M	E												
TEXAS																				
SEATTLE																				
OAKLAND																				
15 14 MINNESOTA	0	0	0	0	0	0	0	0												
7 TAMPA BAY	0	0																		
BALTIMORE																				
NEW YORK																				
BOSTON																				
TORONTO																				
CHICAGO	N	I	T	E	G	A	M	E												
KANSAS CITY																				
SP RP INNING	1	2	3	4	5	6	7	8	9	10										

WIS 16 HITS 6 | CUBS

2008 NL CENTRAL CHAMPIONS

Test and measure with a purpose



Standards are the backbone of improvement



Standards require documentation

Employees feel valued when work gets better or easier

EMPLOYEE RIGHTS

UNDER THE FAIR LABOR STANDARDS ACT

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

FEDERAL MINIMUM WAGE

\$7.25 PER HOUR

BEGINNING JULY 24, 2009

OVERTIME PAY At least 1½ times your regular rate of pay for all hours worked over 40 in a workweek.

CHILD LABOR An employee must be at least 16 years old to work in most non-farm jobs and at least 18 to work in non-farm jobs declared hazardous by the Secretary of Labor.

Youths 14 and 15 years old may work outside school hours in various non-manufacturing, non-mining, non-hazardous jobs under the following conditions:

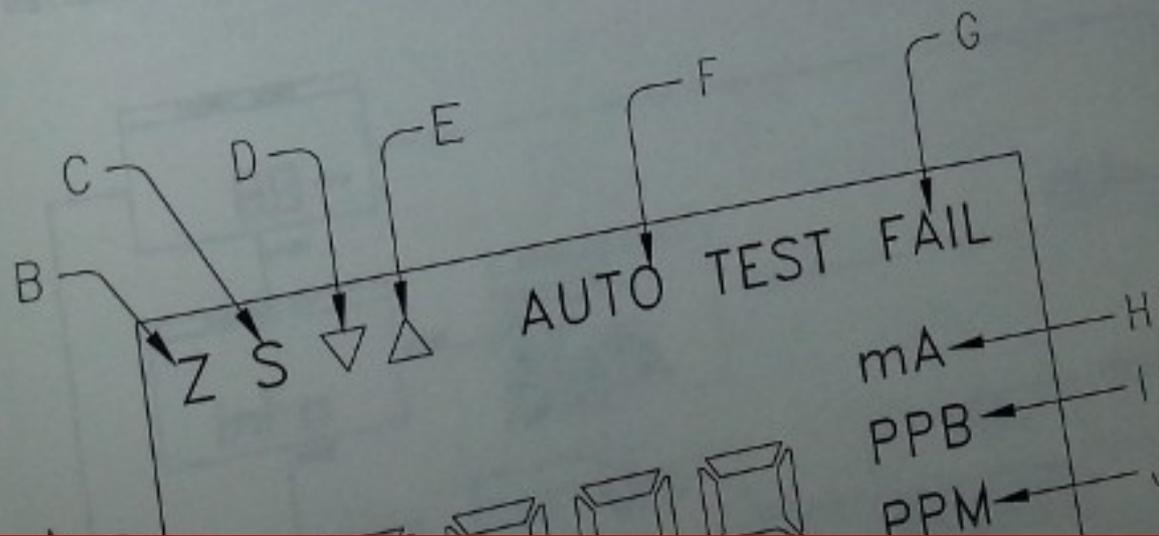
- No more than
- 3 hours on a school day or 18 hours in a school week;
- 40 hours in a non-school week.

Test the manual

ATI Series A12 Unisens 2-Wire Transmitter

LIQUID CRYSTAL DISPLAY

The display in the A12 transmitter provides the operator with a real time concentration display and a variety of prompts for selecting transmitter operating modes. Figure 8 shows the display, including all of the special indicators contained in it. Below that Figure is a description of each of the indicators.



Document after every major change



Appoint a historian



Produce an annual report

2013
ANNUAL REPORT

2012
ANNUAL REPORT

2011
ANNUAL REPORT

Warren Buffett: Master of the annual report



Annual report

- Employees:
 - Who worked here?
 - Who started this year?
 - Who left?
 - Training: Who, where, and when?
- Capital equipment and services:
 - New equipment or contracts? Why?
 - Removed or canceled? Why?
 - Repairs, changes, and overhauls
- Performance:
 - How much work was done?
 - Circumstances affecting the work
 - Special events or conditions
- Customers:
 - What customers did you serve?
 - New customers?
 - Repeat customers?
 - Lost customers?

Produce a yearbook



From all of us at Facebook, we hope
you enjoy this memory

Brian, you posted this photo exactly 1 year
ago and we thought you'd like looking back
on it today.

*Even just a scattering of pictures
can trigger your recall*

com - Breaking News x

www.cnn.com



1 Year Ago

Highlight, underline, and bookmark

Back Cover Installation And Adjustment

(Figures 1 and 8)

If the wear plate (13) was removed for replacement, carefully center it on the back cover and secure it with the hardware (15 and 16). The wear plate **must** be concentric to prevent binding when the back cover is installed.

Clearance between the impeller and wear plate is adjusted using four adjusting screws and locking collars (30 and 31). There are 18 detents on the I.D. of each locking collar. Indexing the collars one detent on the adjusting screws represents approximately .005 inch (0,13 mm) of wear plate clearance. **The recommended clearance between the wear plate and the impeller is .010 to .020 inch (0,25 to 0,50 mm).**

Replace the back cover O-rings (14 and 18) and

nuts (32) on diagonally opposing studs to press the back cover into the pump casing **until the wear plate just touches the impeller when the shaft is turned by hand. Tighten the back cover nuts evenly to avoid binding.**

With the wear plate just touching the impeller, turn the two free adjusting screws until they engage the pump casing. Position the locking collars over the adjusting screws so the holes in the collars for the locking screws align approximately with the holes in the cover plate.

Loosen the back cover nuts used to press the back cover into the pump casing one full turn.

Pull the collars off the adjusting screws, index them three detents counterclockwise, and reinstall the collars on the adjusting screws. Use the collars to turn the adjusting screws clockwise until the holes in the locking collars realign with the tapped screw holes in the back cover plate. Secure the locking

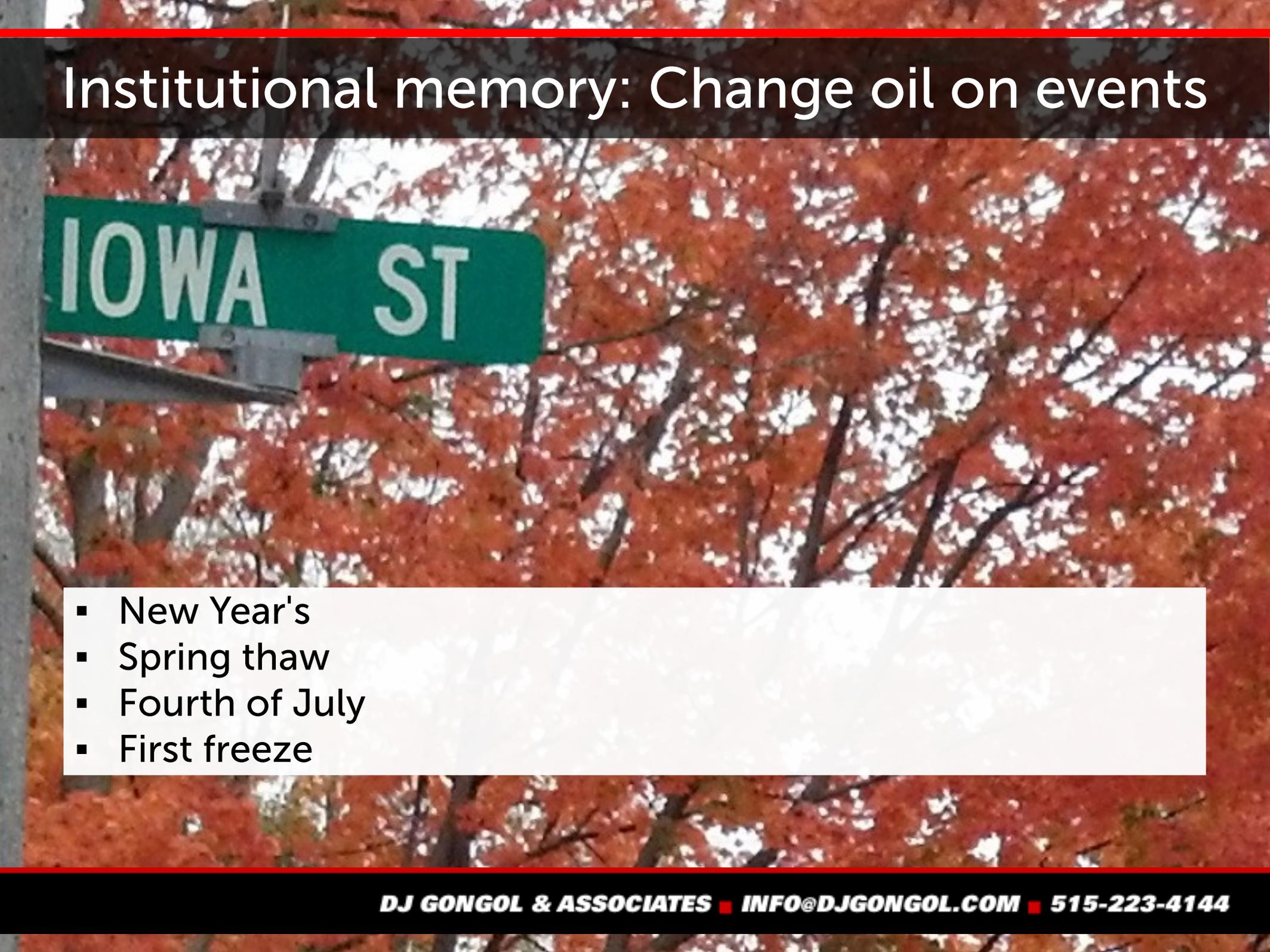
Minutes and reports are necessary

*But they often aren't used
because they remain static*

Book knowledge: Change oil every 3 months



Institutional memory: Change oil on events



IOWA ST

- New Year's
- Spring thaw
- Fourth of July
- First freeze

Reward conscientious documentation

Develop documentation into an expertise

- Just like accounting, maintenance, or management

Documentation & standards built Japan Inc.



Honda motorized its first bicycle in 1947



And built its first car in 1962

Today, Honda builds jets



Documentation overcomes a slow start

1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010



It must be used to become valuable

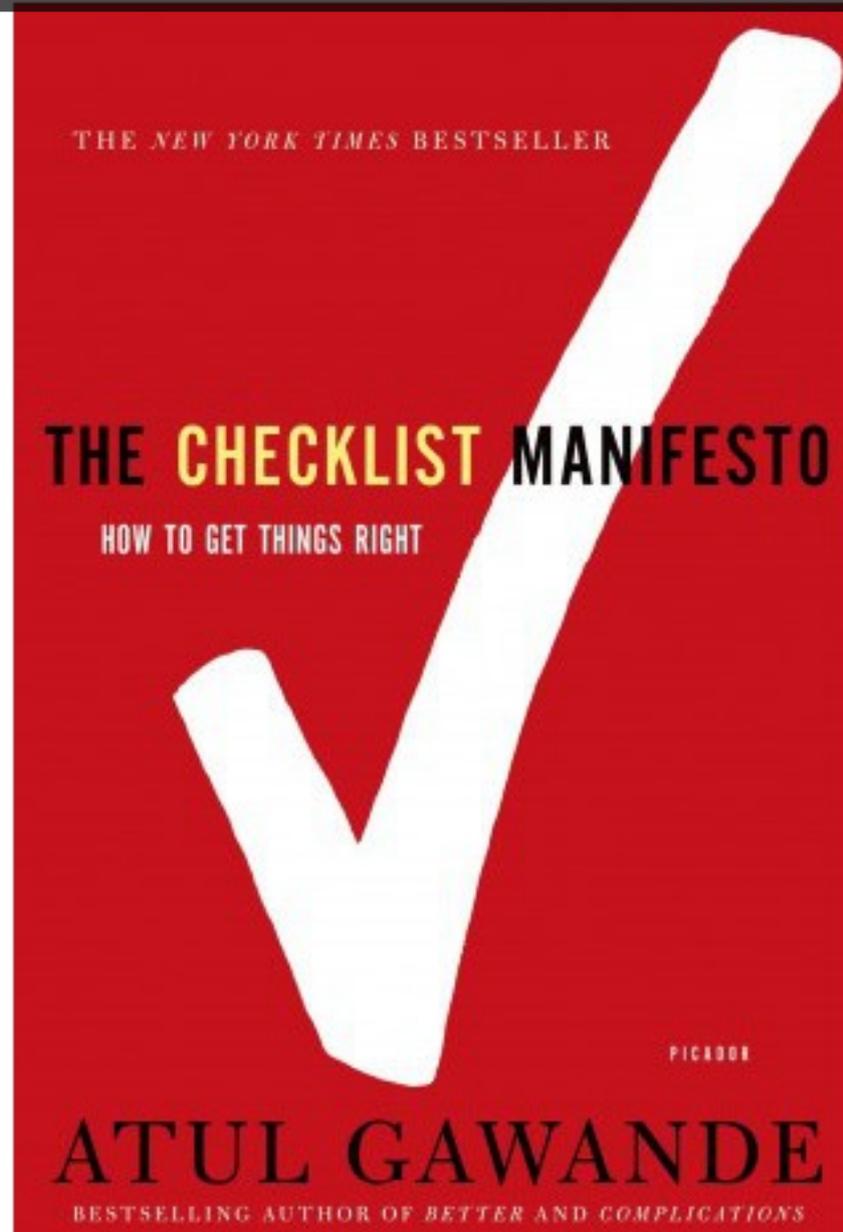
*Toyota is #1 and Honda is building jets
because they deliberately work
on building institutional memory*

Start with a 3-ring binder and loose leaf

Note external sources of change

- New regulations
- New methods
- New state of the art

Read "The Checklist Manifesto"



Keep a second copy of essentials

- Parkersburg wasn't the first devastating tornado
- It won't be the last



Decisions last longer than you usually expect



*Often long past the memories and careers
of those who made them*

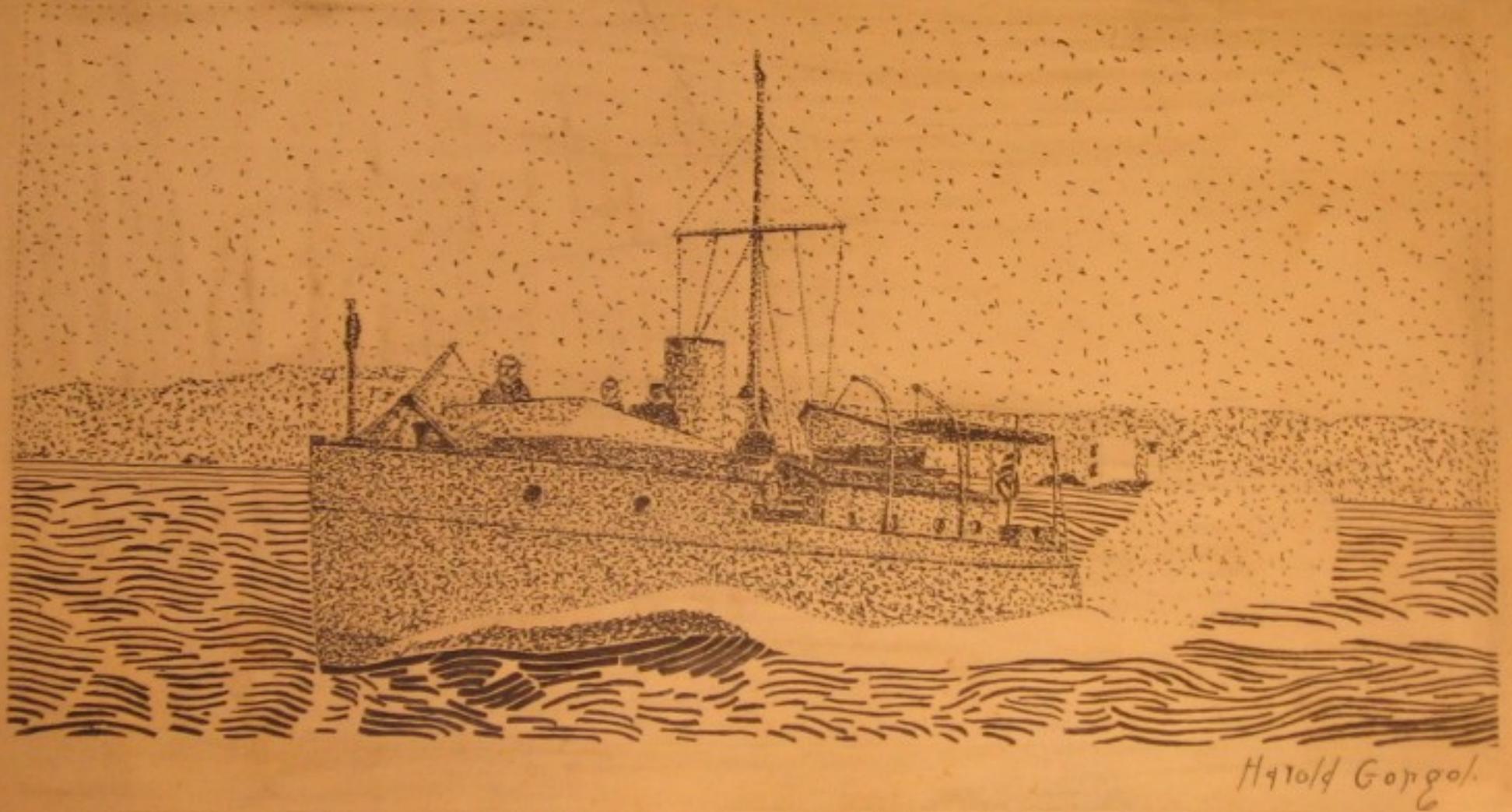
Utility decisions have unusually long durations

WARNING
**UNDERGROUND
CABLE**

BEFORE DIGGING IN
THIS VICINITY PLEASE
CALL (COLLECT) OR
NOTIFY:

CALL OPERATOR
ASK FOR ZENITH 2345
(NO CHARGE)
NORTHWESTERN
BELL TEL. CO.

The weakest ink outlasts the strongest memory



Questions?

- Thank you for coming!
- Brian Gongol
- DJ Gongol & Associates
- 515-223-4144
- info@djgongol.com
- Call or email anytime

References and credits

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<http://world.honda.com/history/limitlessdreams/atype/index.html>
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