



ELEVATOR HACKING

FROM THE PIT TO THE PENTHOUSE



Deviant Ollam

ShakaCon — 2015/07/08



WHO ARE WE?



Who Are We?

Deviant Ollam

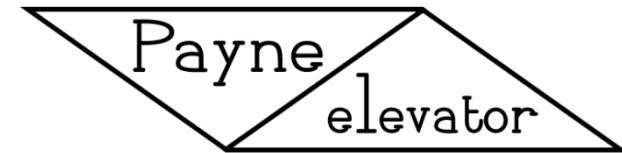
- Physical Penetration Tester
- Red Teamer
- Lockpicker



THE
CORE
GROUP

Howard Payne

- Elevator Consultant & Inspector
- Non-Union
- Boardwalk Badass





WARNING!



If Used Properly Elevators are Incredibly Safe

- NYC alone has almost 60,000 elevators
- 11 billion trips per year, 30 million every day
- Annually there are only about 24 injuries requiring medical attention



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Throughout the entire nation of 300+ million citizens, an average of just 26 people die in a given year riding elevators...



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Throughout the entire nation of 300+ million citizens, an average of just 26 people die in a given year riding elevators...



... the vast majority are trained professionals working on the devices at the time.

Warning – Dying is Not Good



Warning – Damage is Not Good

ELEVATORS
ARE MONITORED
MISUSE, TAMPERING WITH
OR DAMAGING ELEVATOR
WILL RESULT IN
DISCHARGE

Warning – Damage is Not Good



Warning – Damage is Not Good



Warning – We're Professionals

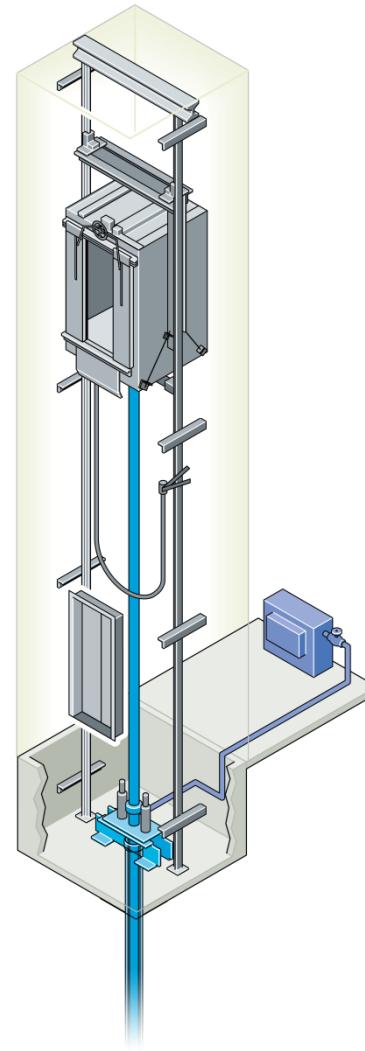
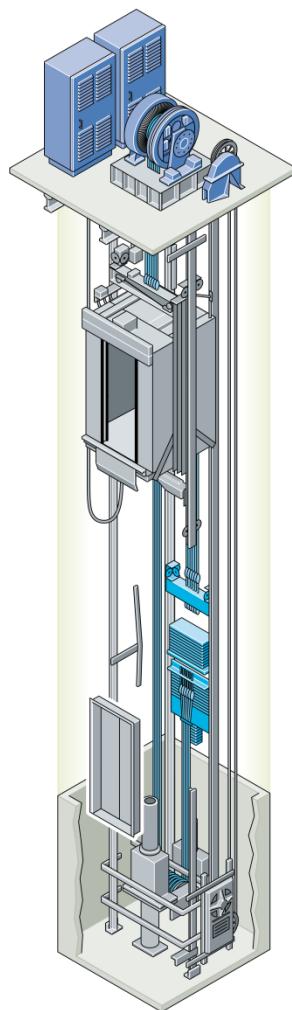




INTRODUCTION TO ELEVATORS



Terms & Technology – Traction vs Hydro



Terms & Technology – Fixtures



Car Operating Panel



Position Indicator



Car Travel Lantern



Hall Stations

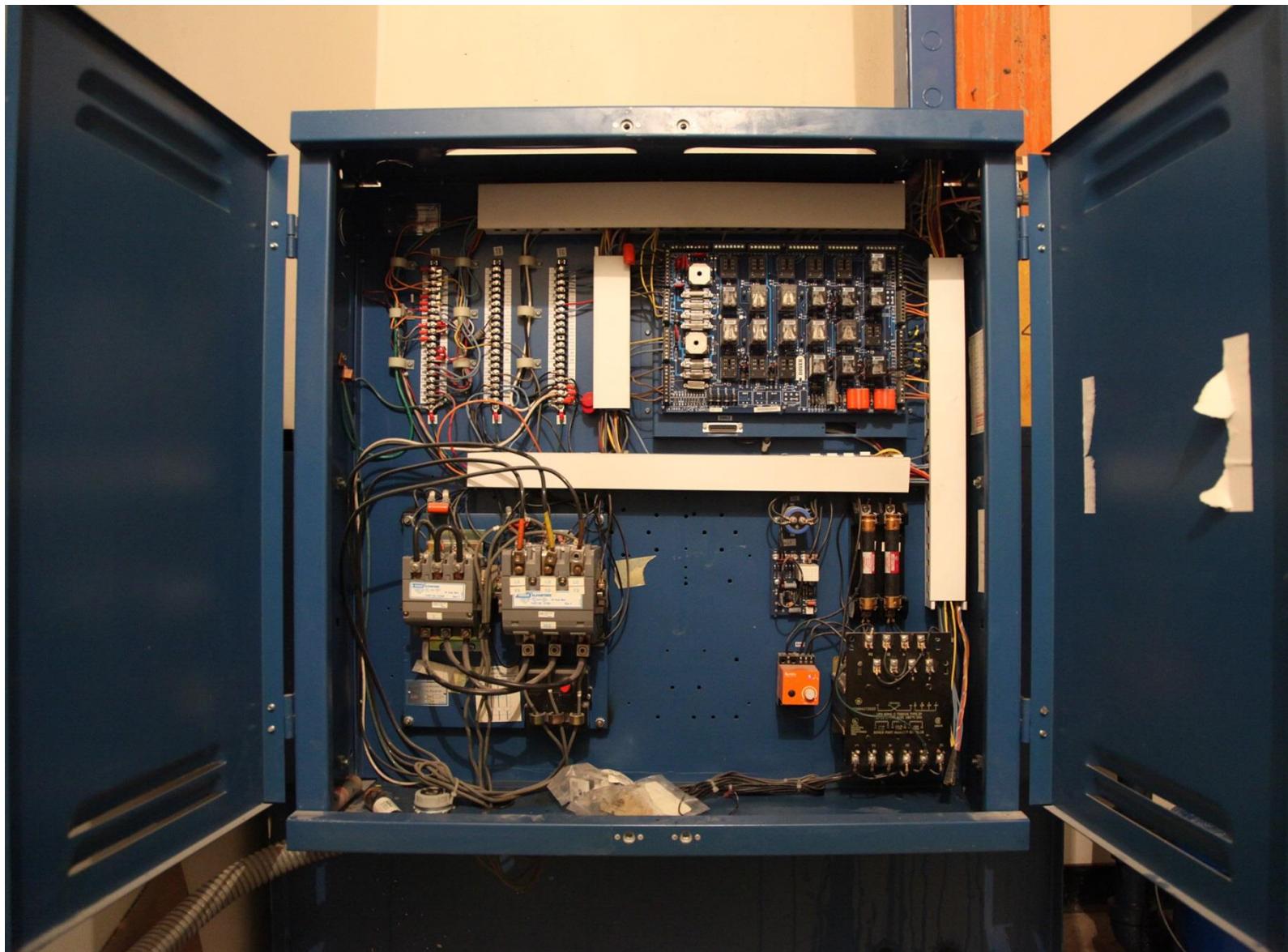


Hall Lantern

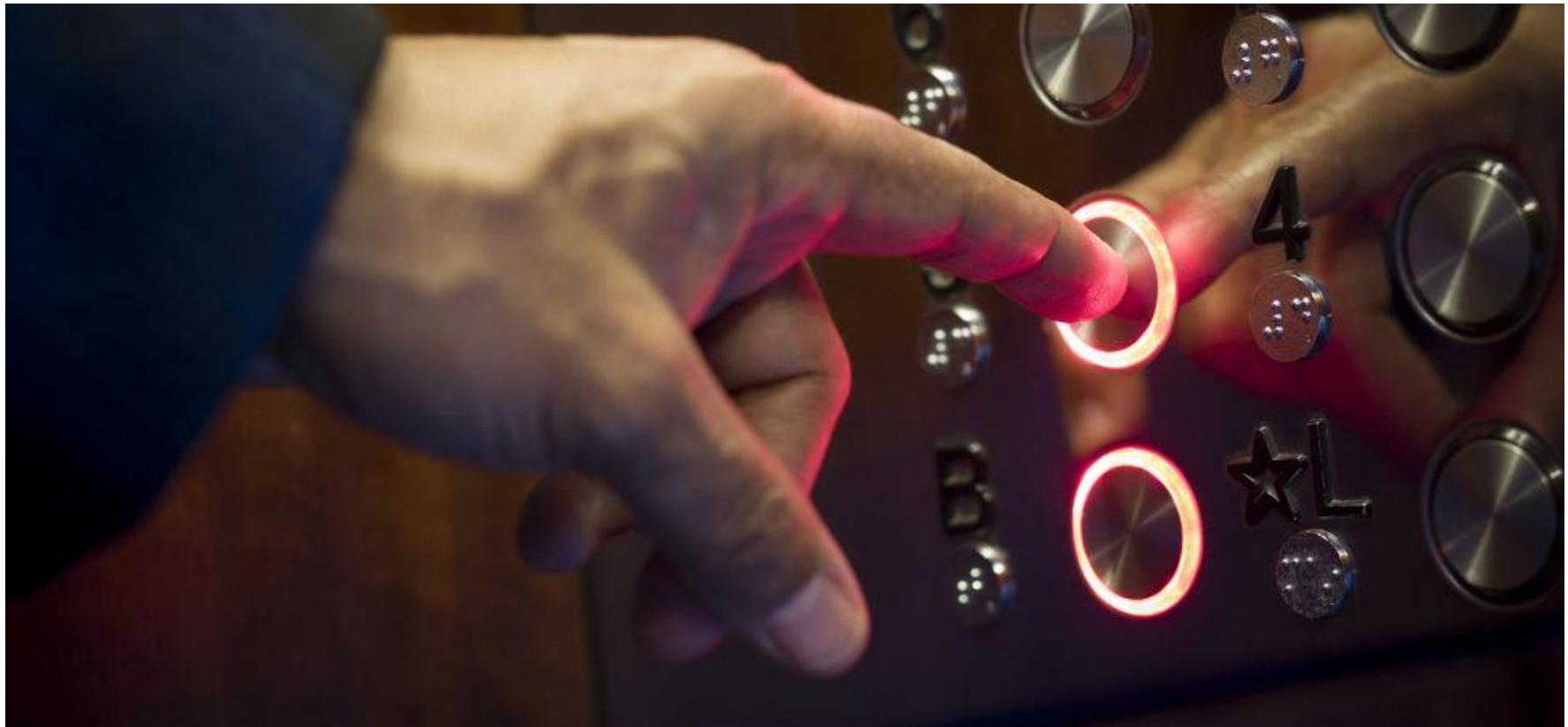
Terms & Technology – Controller



Terms & Technology – Controller



Elevators on Automatic Mode Do Their Job Well Everyday





SPECIAL MODES OF
OPERATION



Independent Service



Independent Service



Attendant Service



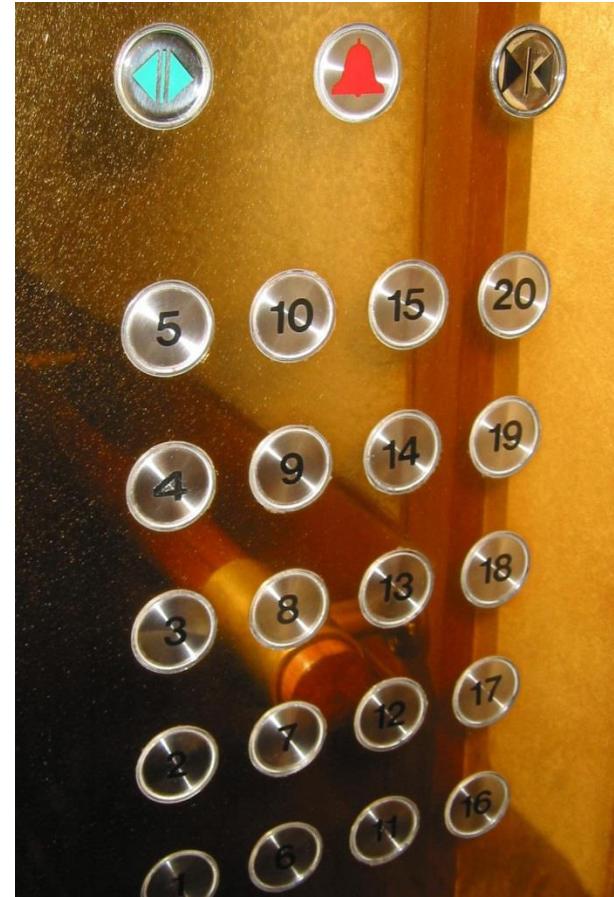
Attendant Service



Attendant Service



Express / Executive / VIP service



Load Bypass



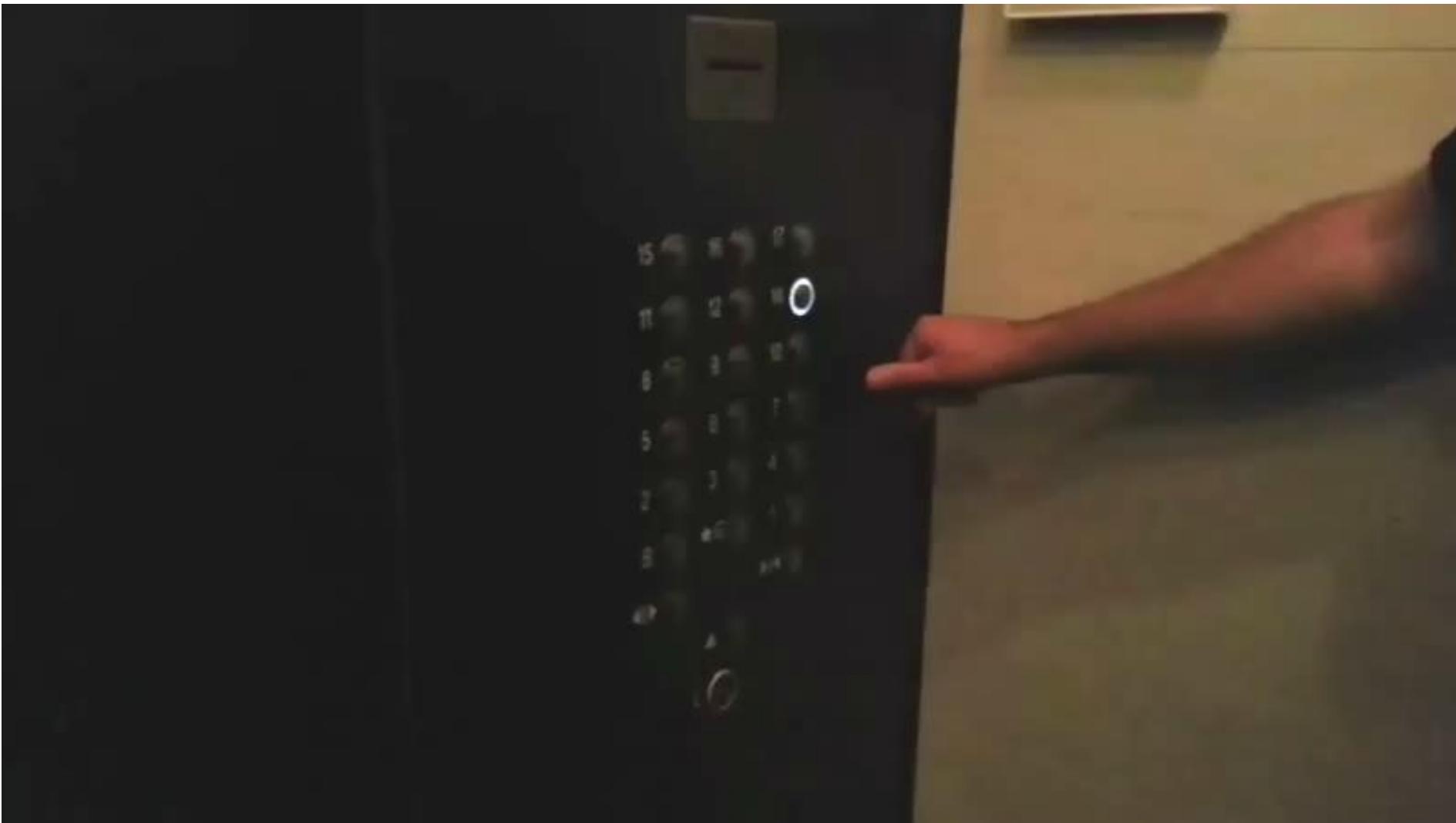
Load Bypass



Anti Nuisance / No Passenger



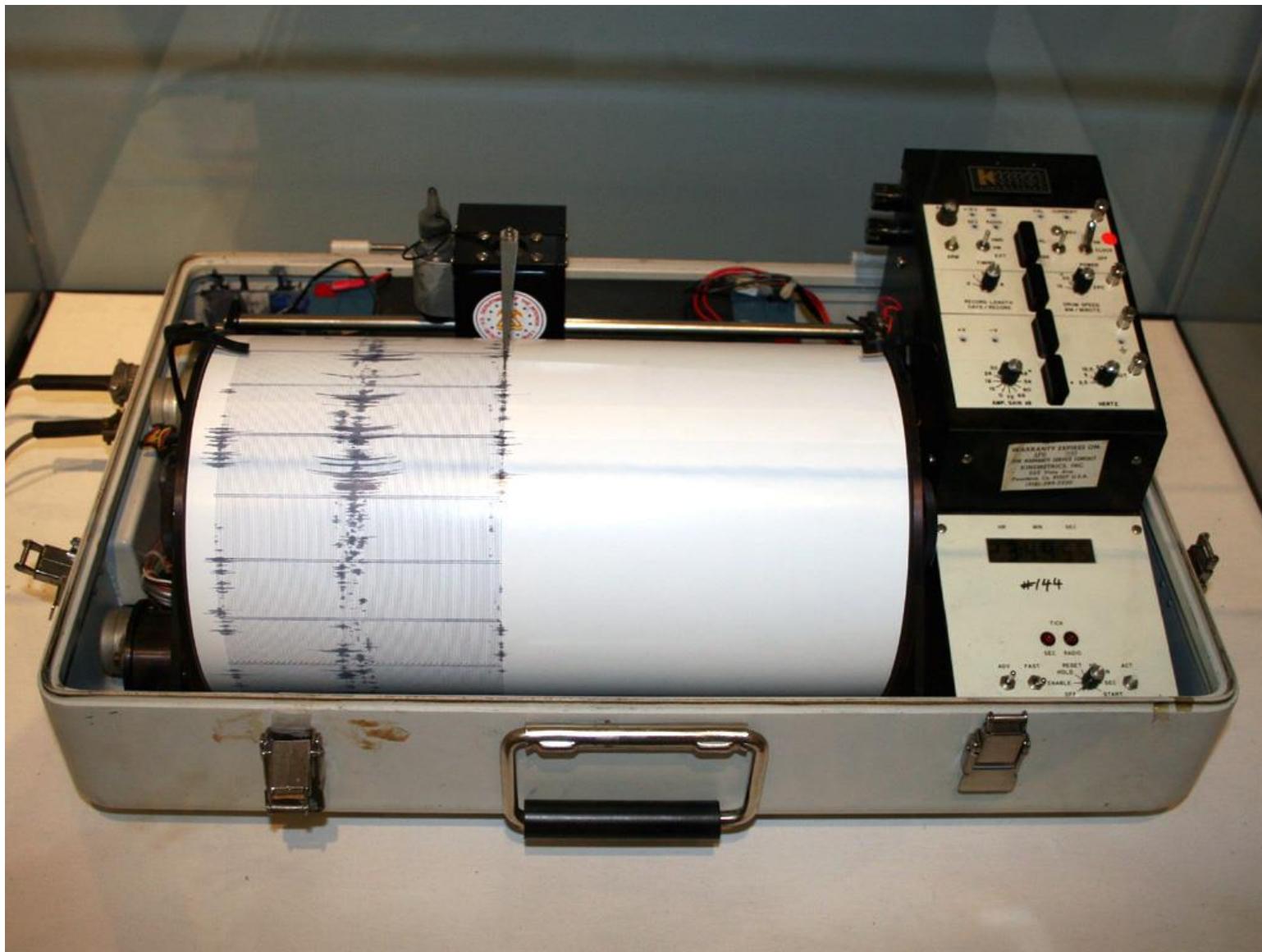
Anti Nuisance / No Passenger / Light Load Call Cancel



Up Peak / Down Peak



Seismic Mode



Riot Mode



Code Blue



Code Pink



Security Recall



Security Recall



Fire Service



Fire Service



Fire Service



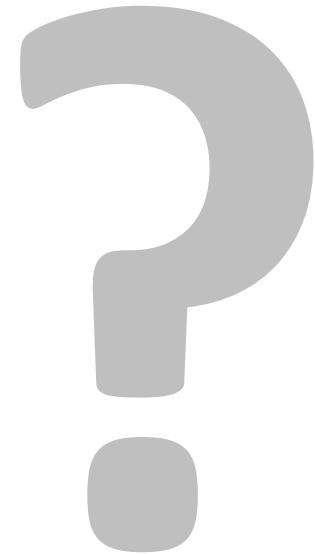
Fire Service – Modernizing and Retrofitting



Fire Service – Modernizing and Retrofitting



Fire Service



Elevator Inspection / Repair



Hoistway Access



Hoistway Access



Hoistway Access



Hoistway Access



Special Modes Can Be Difficult if You're Not in the Industry





ELEVATOR SECURITY

(HOW IT'S ATTEMPTED)



Disabled Hall Call Buttons



No Hall Call Buttons



Keycard to Register Hall Call



Floor Cutouts



Badge Systems



Physically Securing the Elevator Area



Physically Securing the Elevator Area



Think of Elevators like Stairwells... but Sometimes Even Worse





ELEVATOR SECURITY

(HOW IT'S SUBVERTED)



When There Are No Hall Call Buttons



When There Are No Hall Call Buttons



When There Are No Hall Call Buttons

The advertisement features a large background image of an elevator door opening. Overlaid on the left side is the text "OPEN THE DOOR ON INNOVATION." in bold blue letters. On the right side, there is a smaller inset image showing the internal components of the GateKeeper 3000 unit, which is a compact blue device with various wires and sensors. Below this inset, a caption reads: "The GateKeeper™ 3000's compact design and advanced technology make it the best option for elevator door protection." At the bottom of the page, a close-up photograph shows a person's hand reaching towards an open elevator door.

OPEN THE DOOR ON INNOVATION.

INTRODUCING THE LATEST IN THE GATEKEEPER™ SERIES.

The compact design and advanced technology of the GateKeeper™ 3000 make it the best—and most economical—option for advanced door protection. The light curtain is made up of 154 criss-cross beams, which remain active until the door is fully closed, ensuring passengers remain safe while entering and exiting at each elevator landing zone. With the most reliable light curtain technology and a 5-year light curtain warranty, Adams has you covered.

Visit shop.adams-elevator.com to get an additional 2% off the GateKeeper™ 3000.

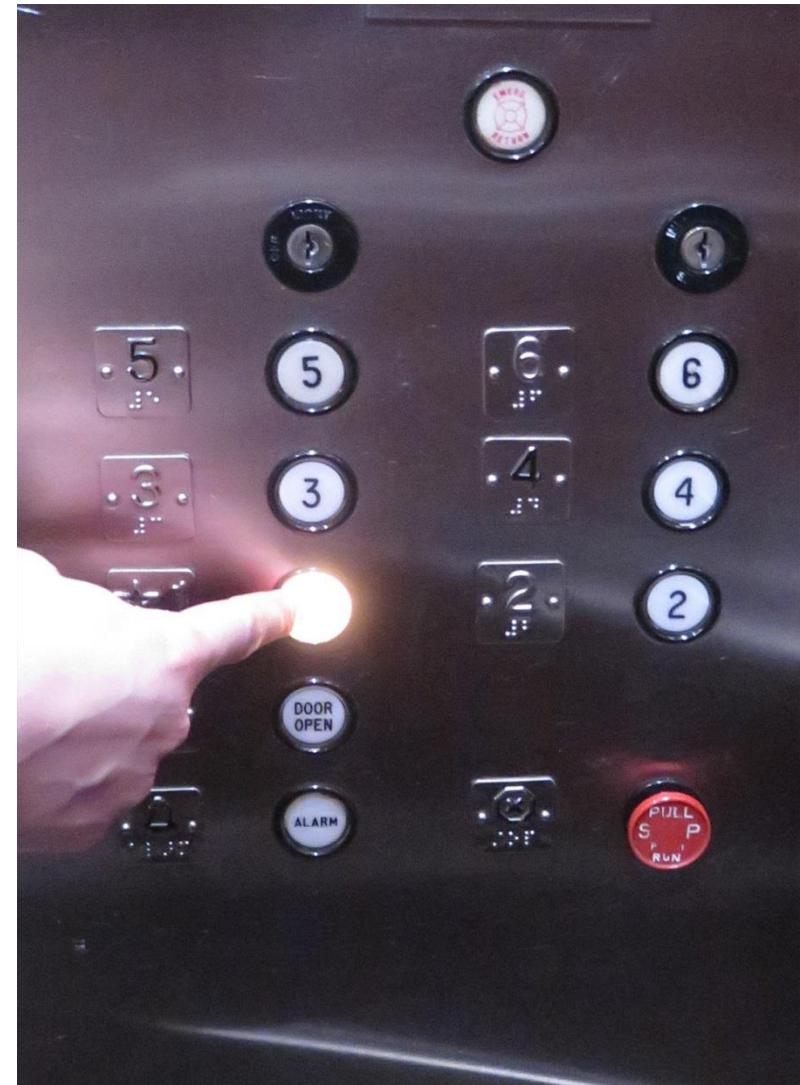
Top Floor Access without Key Cards



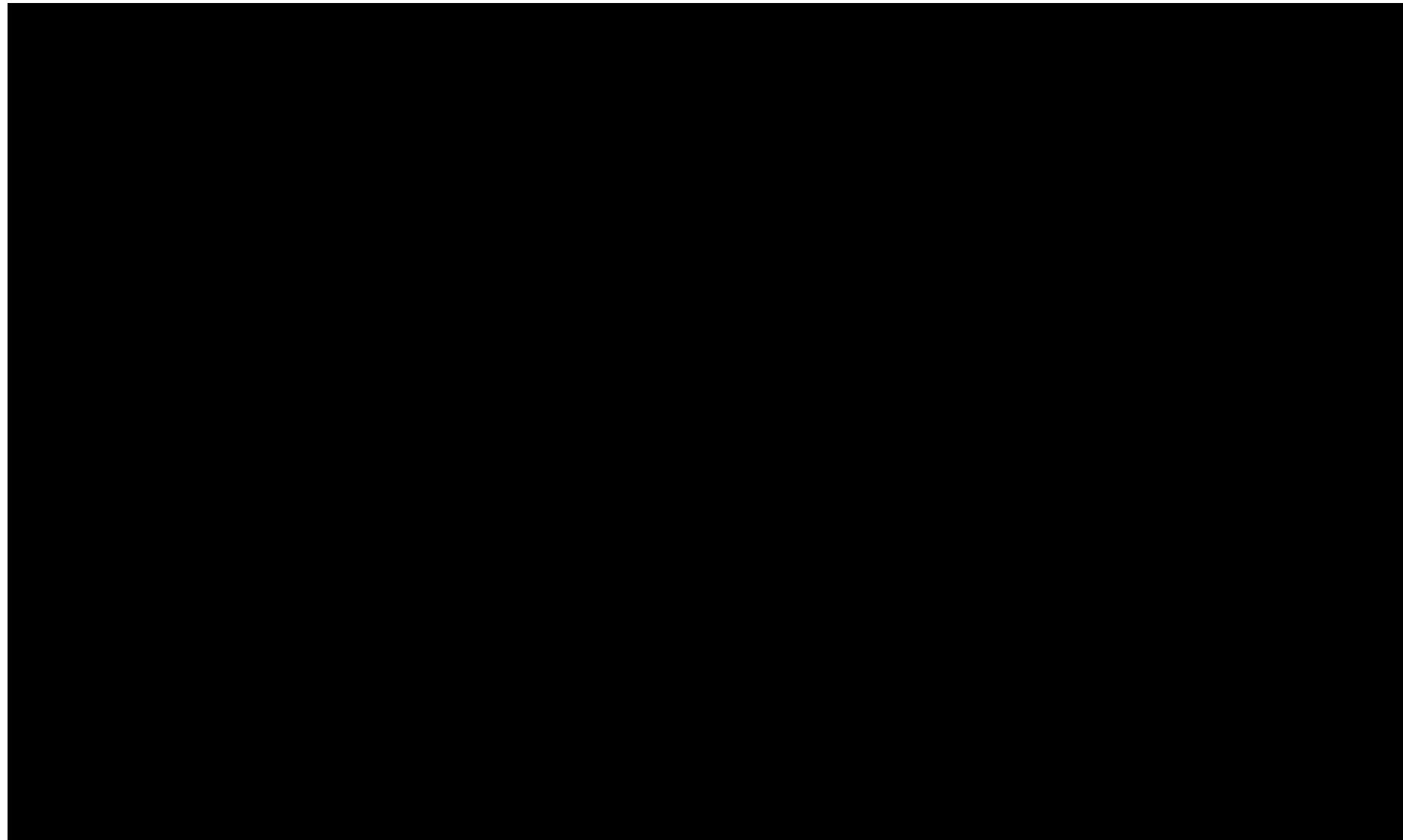
Top Floor Access without Key Cards



Top Floor Access without Key Cards



Top Floor Access without Key Cards



Key Switches



Key Switches



Welcome To the Kingdom of Keys!



Keys & Fixtures

Brands of Elevator

- OTIS
 - Cemco
- KONE
 - Montgomery
 - Armor
- Schindler
 - Westinghouse
 - O. Thompson
 - Payne
- ThyssenKrupp
 - Dover
 - US Elevator

Brands of Fixtures

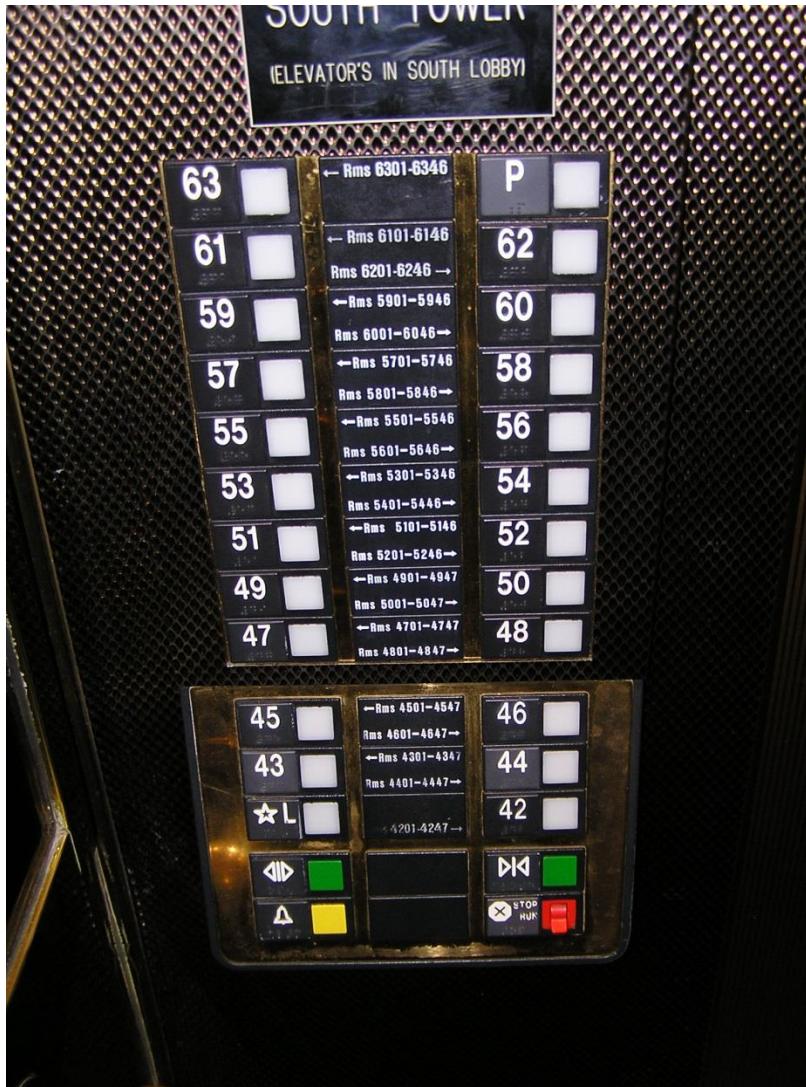
- G.A.L.
- EPCO
- Innovation
- Adams
- Monitor / Janus
- CJ Anderson
- P.T.L.
- MAD

Keys & Fixtures



OTIS

Keys & Fixtures



OTIS

Keys & Fixtures



Keys & Fixtures



Schindler

Keys & Fixtures



The artist formerly known as



Keys & Fixtures



The artist formerly known as



Keys & Fixtures



Keys & Fixtures



Keys & Fixtures



Keys & Fixtures



Keys & Fixtures



ADAMS

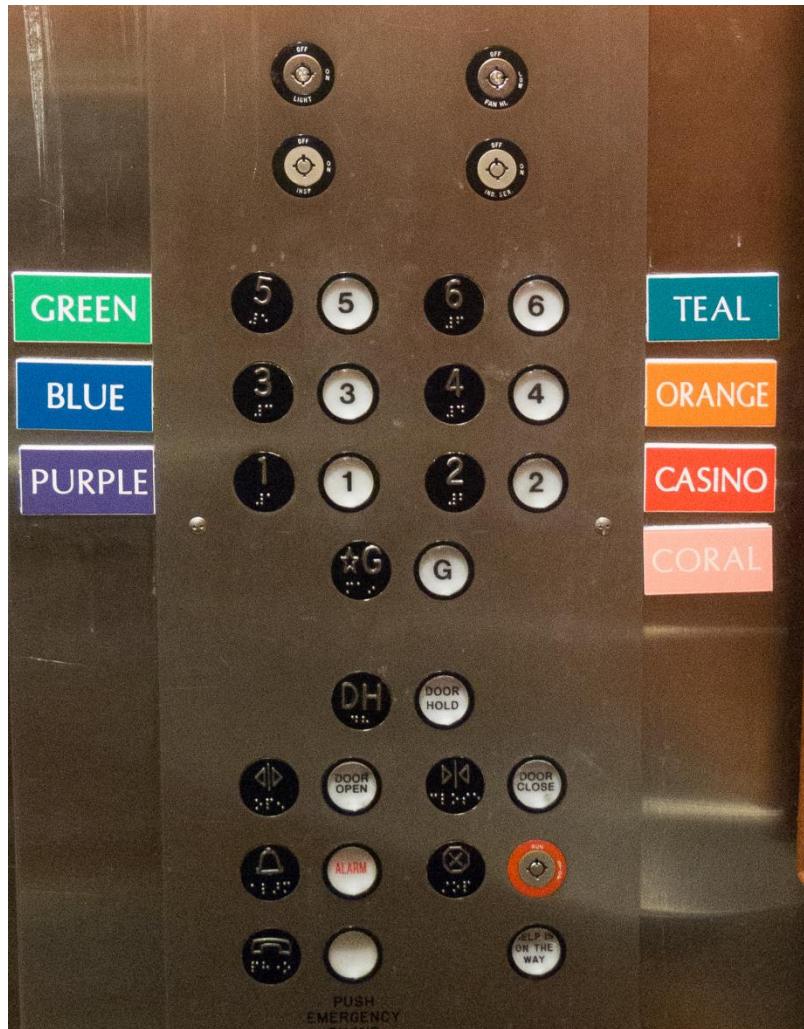
Keys & Fixtures



FUJITEC

Elevators.
Escalators.
Service.

Keys & Fixtures



Key Suppliers



Key Suppliers



Key Suppliers



What About Cutting-Edge Systems?



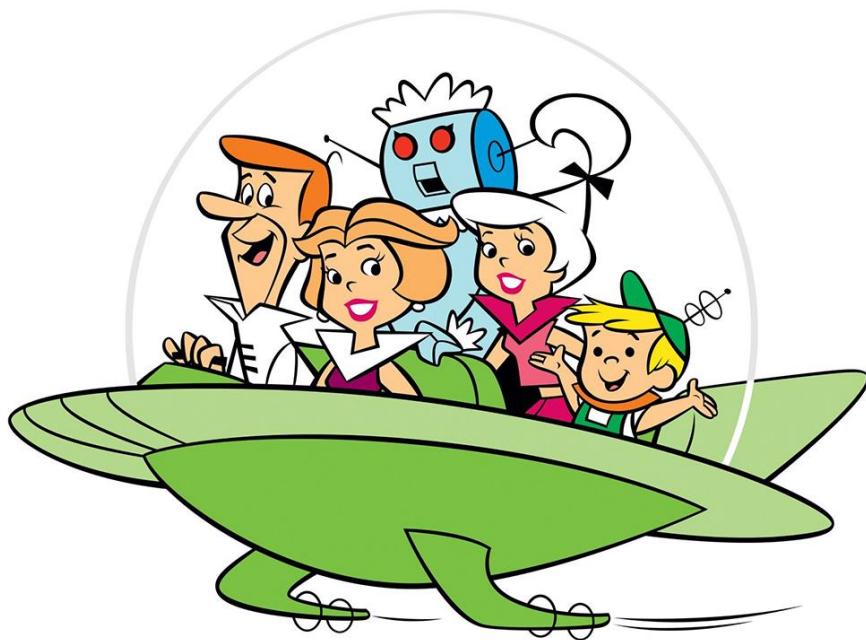
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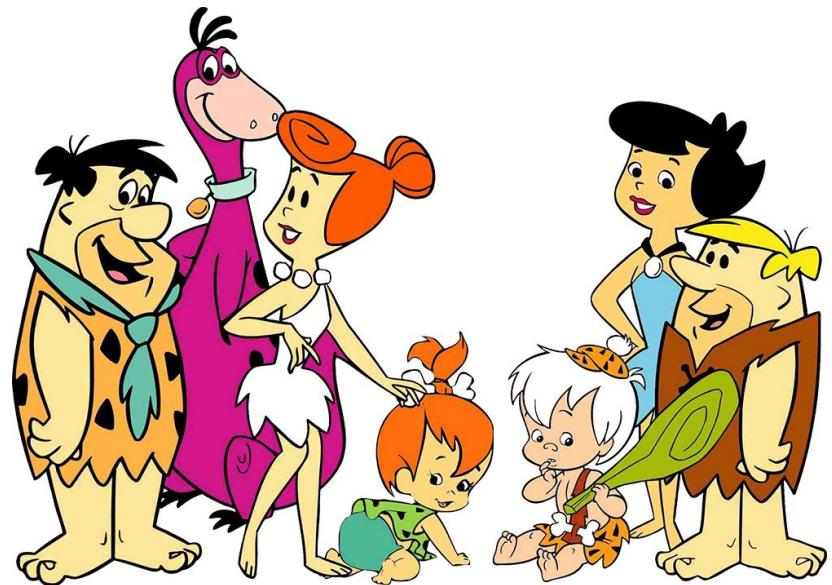
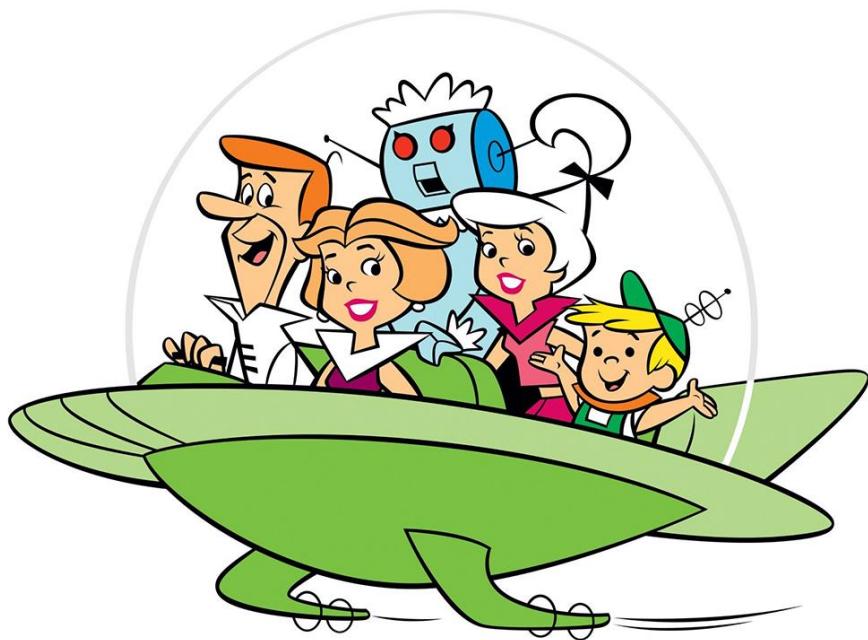
There's Always Fire Service



But Forget the Future...



But Forget the Future... We're Stuck in the Past



The Industry is WAY Behind the Times on Security

90 John Sly H...

Views Controls Faults

Car 1	Car 5
2	6
NAV	NAV
Car 2	Car 6
3	7
NAV	NAV
Car 3	Car 7
5	9
NAV	NAV
Car 4	Car 8
4	10
NAV	NAV

Overhead Layout (All Forms)

Side Margins: 20 Top Margin: 15
 Column Spacing: 25 Row Spacing: 10
 Alert Circle Adjustment: 0

Elevator Size
 Width: 20 Apply to Forms
 Height: 40
 Border: 1

3D Appearance
 3D Width: 0
 3D Height: 0
 Doubledeck Floor Gap: 0

Font
 Times New Roman
Car Label
 Height: 17

Group Security / Timers

Perform Copy Security Type

Timed Car Call Security for Floor 14

12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	
Mon.	Red												Green											
Tue.	Red												Green											
Wed.	Red												Green											
Thu.	Red												Green											
Fri.	Red												Green											
Sat.	Red												Green											
Sun.	Red												Green											

Click on a cell to set or unset floor security at the indicated time. Click and drag to set multiple times. 15 Minute

= Secure
 = Restore Normal
 = No Action
 = Locked

HIGH RISE Group Security

Resize Grid Lines

Car 6	Car 7	Car 8	All Cars	Up Calls	Down Calls
39	39	39	Secure Normal	39	39
38	38	38	Secure Normal	38	38
37	37	37	Secure Normal	37	37
36	36	36	Secure Normal	36	36
35	35	35	Secure Normal	35	35
34	34	34	Secure Normal	34	34
33	33	33	Secure Normal	33	33
32	32	32	Secure Normal	32	32
31	31	31	Secure Normal	31	31
30	30	30	Secure Normal	30	30
29	29	29	Secure Normal	29	29
28	28	28	Secure Normal	28	28
27	27	27	Secure Normal	27	27
26	26	26	Secure Normal	26	26
25	25	25	Secure Normal	25	25
24	24	24	Secure Normal	24	24
23	23	23	Secure Normal	23	23
22			Secure Normal	22	22
21			Secure Normal	21	21
20			Secure Normal	20	20
19			Secure Normal	19	19
18			Secure Normal	18	18
17			Secure Normal	17	17
16			Secure Normal	16	16
15			Secure Normal	15	15
14			Secure Normal	14	14
13			Secure Normal	13	13
12			Secure Normal	12	12
11			Secure Normal	11	11
10			Secure Normal	10	10
9			Secure Normal	9	9
8			Secure Normal	8	8
7			Secure Normal	7	7
6			Secure Normal	6	6
5			Secure Normal	5	5
4			Secure Normal	4	4
3			Secure Normal	3	3
2			Secure Normal	1	1
1			Secure Normal	B	

Double Click on a floor to secure or unsecure it.

The Industry is WAY Behind the Times on Security



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Lift-Net computers are shipped with the following defaults:

Standard Access

User ID = 123

Password = 456

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Lift-Net computers are shipped with the following defaults:

Standard Access

User ID = 123

Password = 456

Administrator Access

User ID = abc

Password = def

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Create a new user account. For user name use **mcesupport** and password **mcesupport**. Click the Add to list button.

A screenshot of a Linksys 10/100 4-port VPN Router configuration interface. The top navigation bar includes tabs for System Summary, Setup, DHCP, System Management, Firewall, VPN, Log, and Wizard. The VPN tab is selected. Below the tabs, sub-tabs include Summary, Gateway to Gateway, Client to Gateway, VPN Client Access, VPN Pass Through, and Firewall. On the left, a sidebar lists PPTP Server, IP Address Range, and Users Setting. The main content area shows the 'PPTP Server' settings with an 'Enable PPTP Server' checkbox checked. Under 'IP Address Range', 'Range Start' is set to 172.17.2.242 and 'Range End' is set to 172.17.2.246. In the 'Users Setting' section, there is a form for adding a new user: 'User Name' is mcesupport, 'New Password' and 'Confirm New Password' are both masked with five dots. A large blue button labeled 'Add to list' is visible. Below the form is a large empty rectangular box and a small button labeled 'Delete selected users'.

Click Save settings at the bottom of the screen.

Click the Setup tab, then click Password below. Type in **admin** for the Old Password field and **mcesupport** for the New Password and Confirm New Password fields. Click Save Settings at the bottom.

When you log into the router in the future, use the username **admin** and the password **mcesupport**.

VPN router configuration is now complete.

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The screenshot shows the Linksys 10/100 4-port VPN Router's web-based management interface. The top navigation bar includes tabs for System Summary, Setup, DHCP, System Management, Firewall, VPN, Log, and Wizard. The main content area is titled "PPTP Server". A checkbox labeled "Enable PPTP Server" is checked. Below it, there are fields for "Range Start" (172.17.2.242) and "Range End" (172.17.2.246). On the left sidebar, there are links for "IP Address Range" and "Users Setting". The "Users Setting" section contains a form with three input fields: "User Name" (mcesupport), "New Password" (*****), and "Confirm New Password" (*****). Below the form is a button labeled "Add to list". At the bottom of the "Users Setting" section is a button labeled "Delete selected users".

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ASME A17.1 (2007): Safety Code for Elevators & Escalators

2.27.8 Switch Keys

The key switches required by 2.27.2 through 2.27.5 for all elevators in a building shall be operable by the same key. The keys shall be Group 3 Security (see 8.1). There shall be a key for each switch provided. These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public.

The possession of the "FEO-K1" key shall be limited to elevator personnel, emergency personnel, and elevator equipment manufacturers. Where provided, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9).

NOTE (2.27.8): Local authorities may specify additional requirements for a uniform keyed lock box and its location to contain the necessary keys.

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This key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521. The key shall be coded "FEO-K1."

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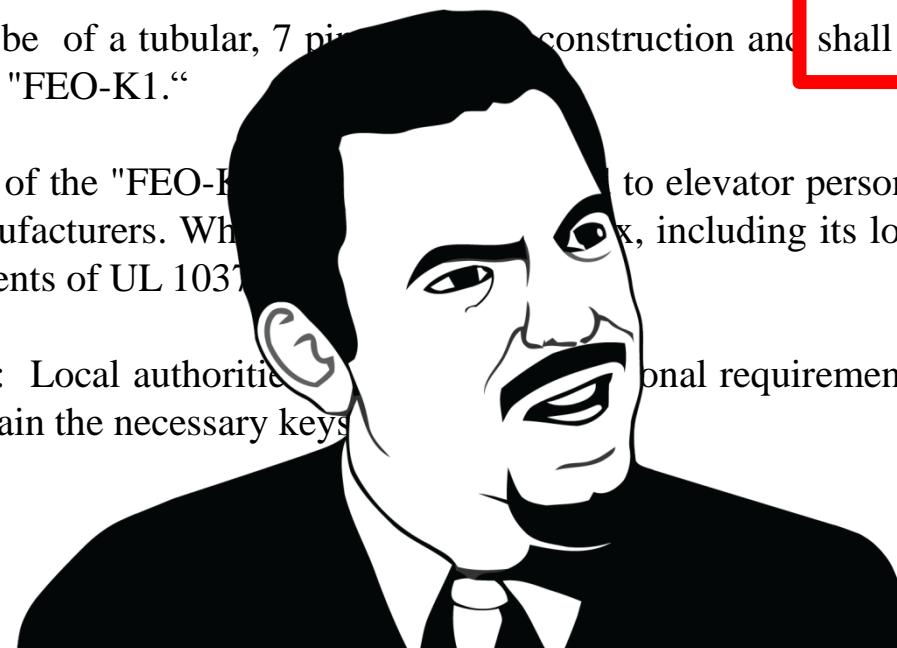
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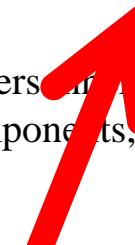
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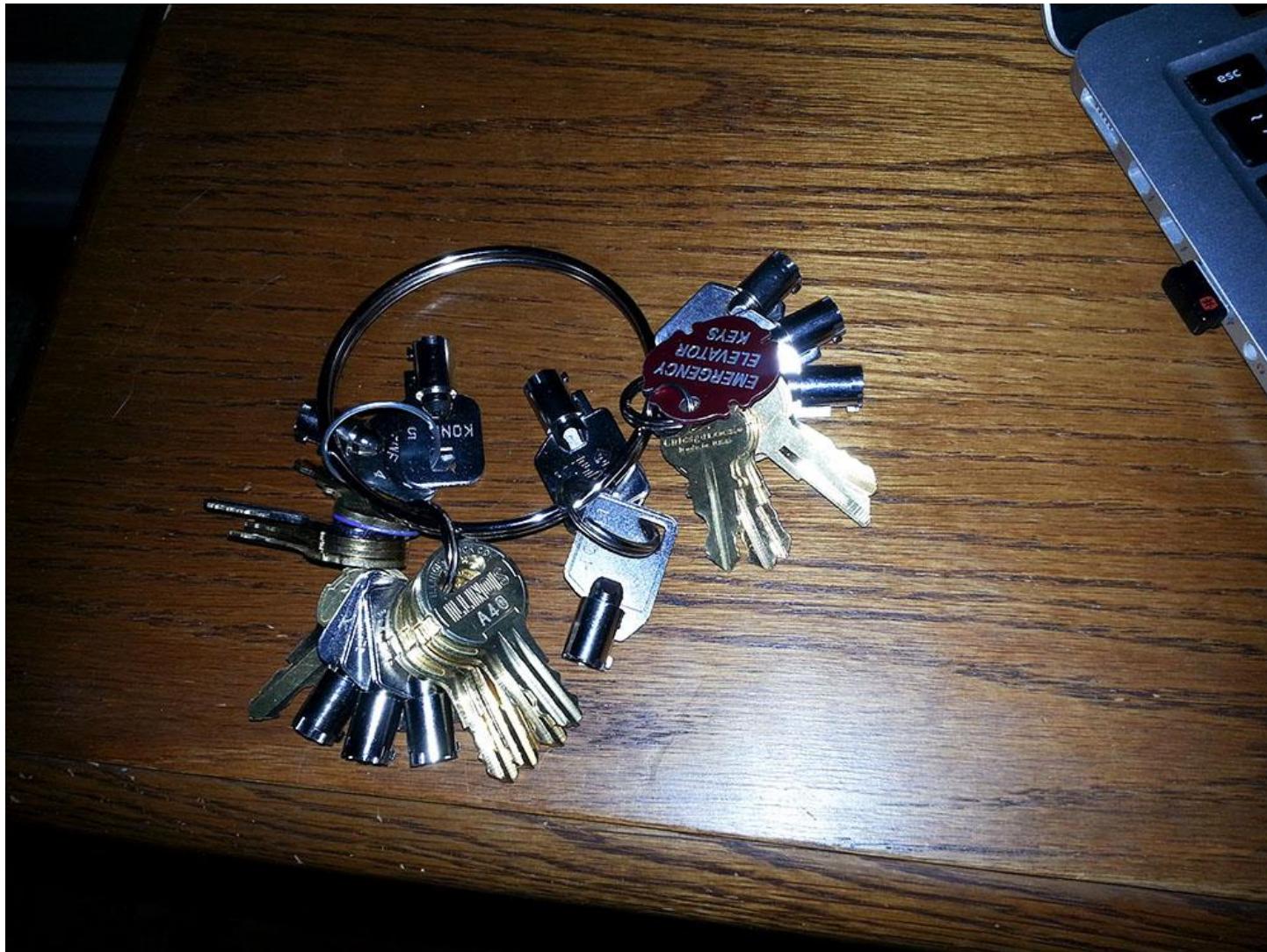
It's All Naked on the Inside



So What Do Pen Testers Do?



Usually We Just Use the Keys



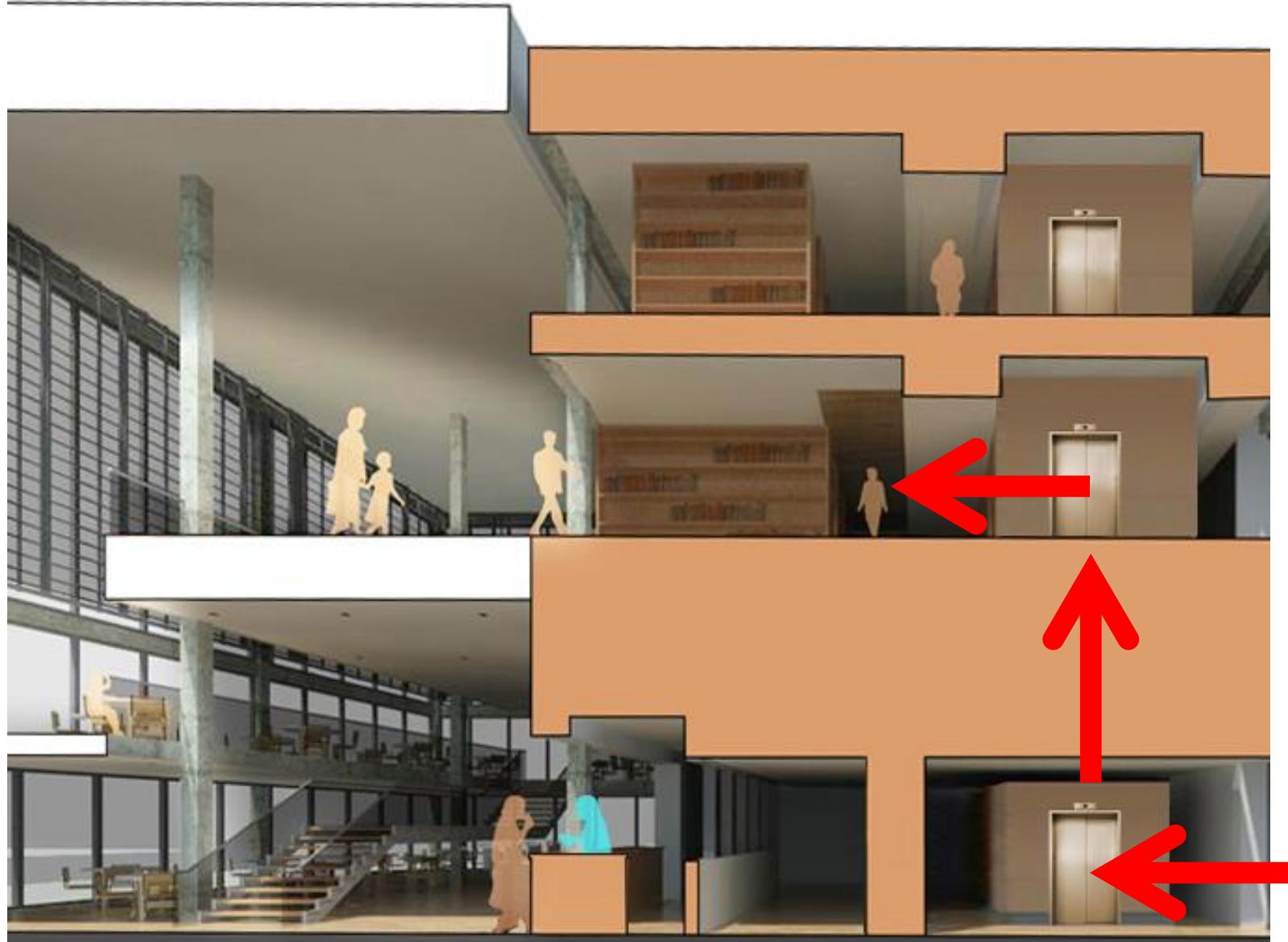
Fire Service



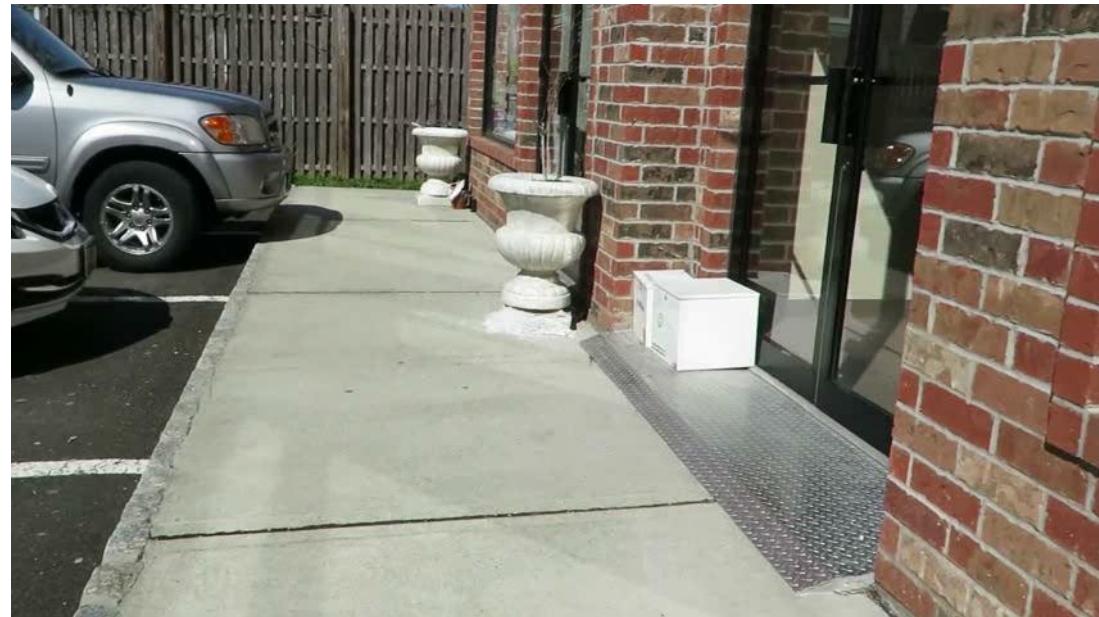
Fire Service



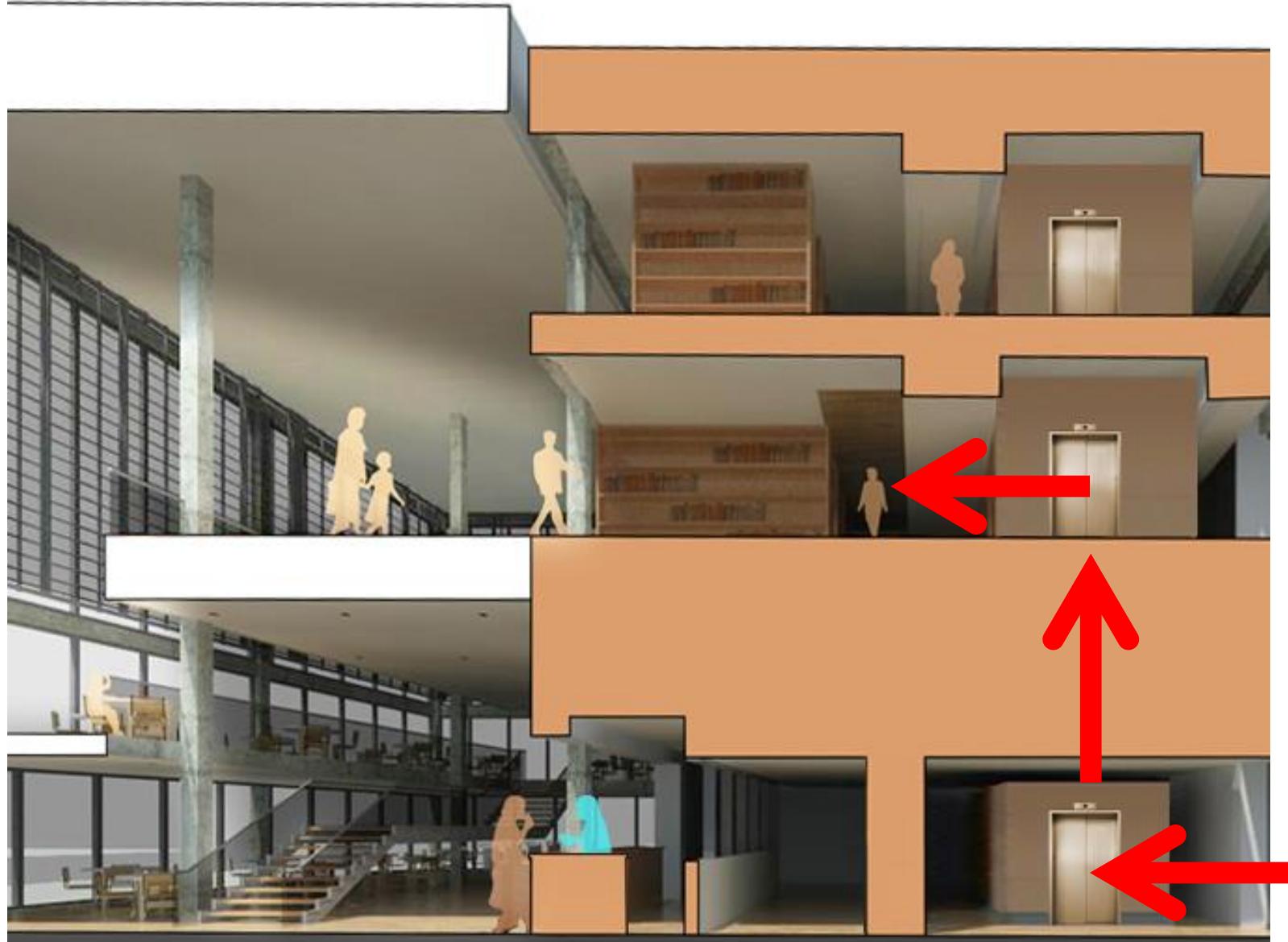
Fire Service



Fire Service



Fire Service



<http://enterthecore.net>

Fire Service



ELECTRICAL PANEL KEY

- What it does: Opens street-lamp boxes and circuit-breaker panels in virtually every building in NYC
- What you could do: Shut off power to City Hall or a police station house
- Who has it: City electricians and contractors

FIRE ELEVATOR KEY

- What it does: Controls almost any elevator in the city. Unlocks fire-alarm panels in buildings
- What you could do: Send all the elevators in the Empire State Building to the ground floor, trapping everyone inside
- Who has it: FDNY and fire-safety workers

TRAFFIC LIGHT KEY

- What it does: Works on older versions of traffic-light control panels
- What you could do: Cause a massive traffic jam to tie up police/fire response
- Who has it: Transportation workers

FIREMAN SERVICE KEY "1620"

- What it does: Controls elevators and opens locked subway entrances, construction-site master key boxes and some firehouse doors
- What you could do: Take over the subways or One World Trade Center
- Who has it: FDNY and building engineers

FIRE ALARM BOX KEY

- What it does: Works on street alarm boxes
- What you could do: Set off alarm chaos

Fire Service



"The Post published pictures of the fire service keys only after checking with locksmiths who said duplicates could not be made without the originals in hand." <http://nypost.com/2012/10/01/lock-away-these-nyc-keys>



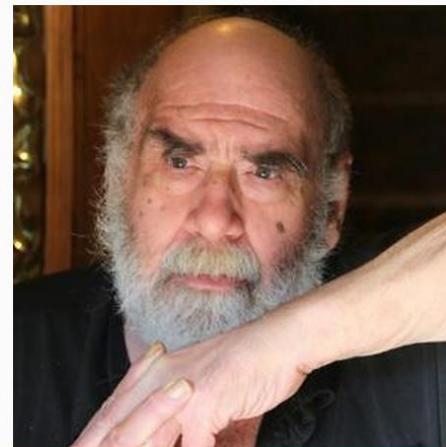
METRO



Lock away these NYC keys!

By Susan Edelman

October 1, 2012 | 4:00am

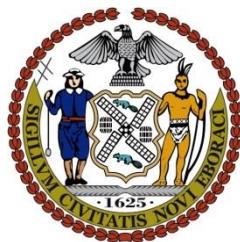


DANGEROUS TRADE: Ex-locksmith Daniel Ferraris — who was revealed by The Post yesterday to be selling master “firefighter keys” on eBay—says he will no longer be hawking them after a city fire marshal asked him to stop.

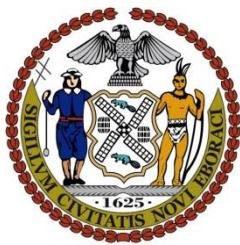
Photo: Warzer Jaff

Angry city officials yesterday vowed to close dangerous loopholes that could allow terrorists unfettered access to subway gates, firehouses and any building elevator using “master” keys meant only for authorized personnel.

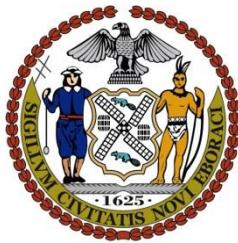
The Post yesterday detailed how retired New Jersey locksmith Daniel Ferraris was legally selling on eBay an assortment of the city’s “master” keys, which open all of its electrical panels, elevator controls, traffic-light relays, subway entrances and



The Infamous “2642 Key”



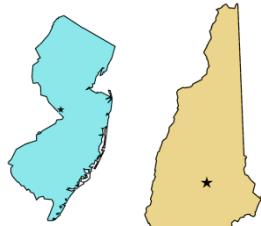
The Infamous “2642 Key”
Yale Y1 key (unrestricted blank)



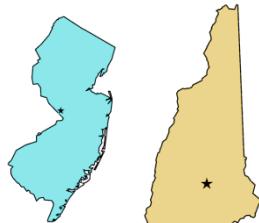
The Infamous “2642 Key”
Yale Y1 key (unrestricted blank)
Bitting Code: 2-6-4-2-0

Fire Service



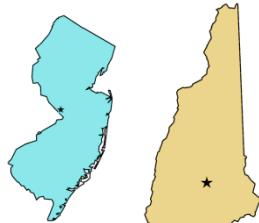


The “3502 Key”



The “3502 Key”

Yale Y2 key (unrestricted blank)



The “3502 Key”

Yale Y2 key (unrestricted blank)

Bitting Code: 0-3-2-1 [REDACTED]



The Tennessee Key



The Tennessee Key
Gamewell “Christmas Tree” Key
reused and repurposed



**Gamewell “Christmas Tree” Key
reused and repurposed**



The Indiana Key

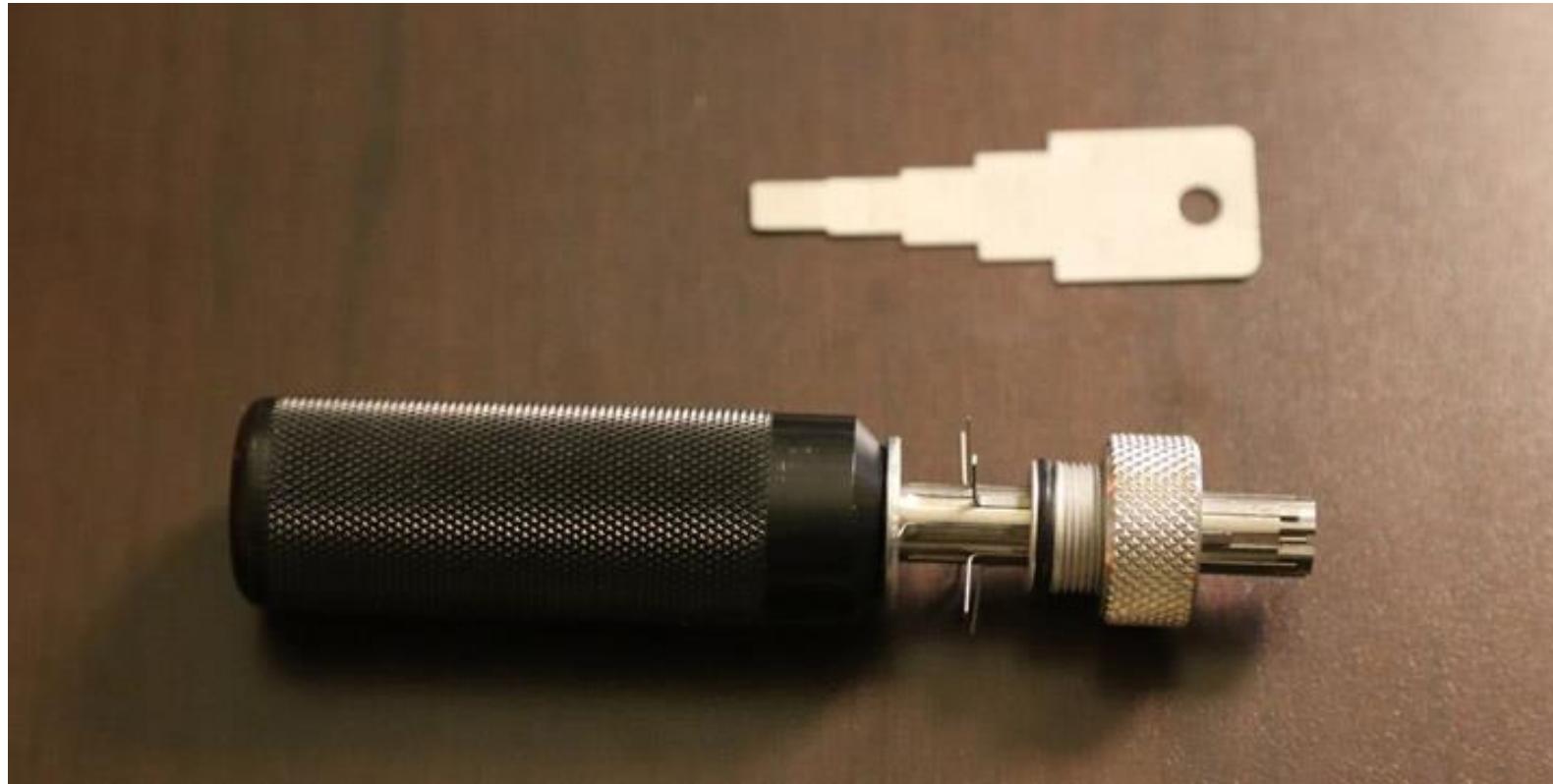


The Indiana Key



The Indiana Key
7-pin Tubular Key (unrestricted blank)

Fire Service



Fire Service



Fire Service



Fire Service





The Indiana Key

7-pin Tubular Key (unrestricted blank)

Bitting Code: 3-5-7-[REDACTED]

Fire Service



The Minnesota Key





The Minnesota Key

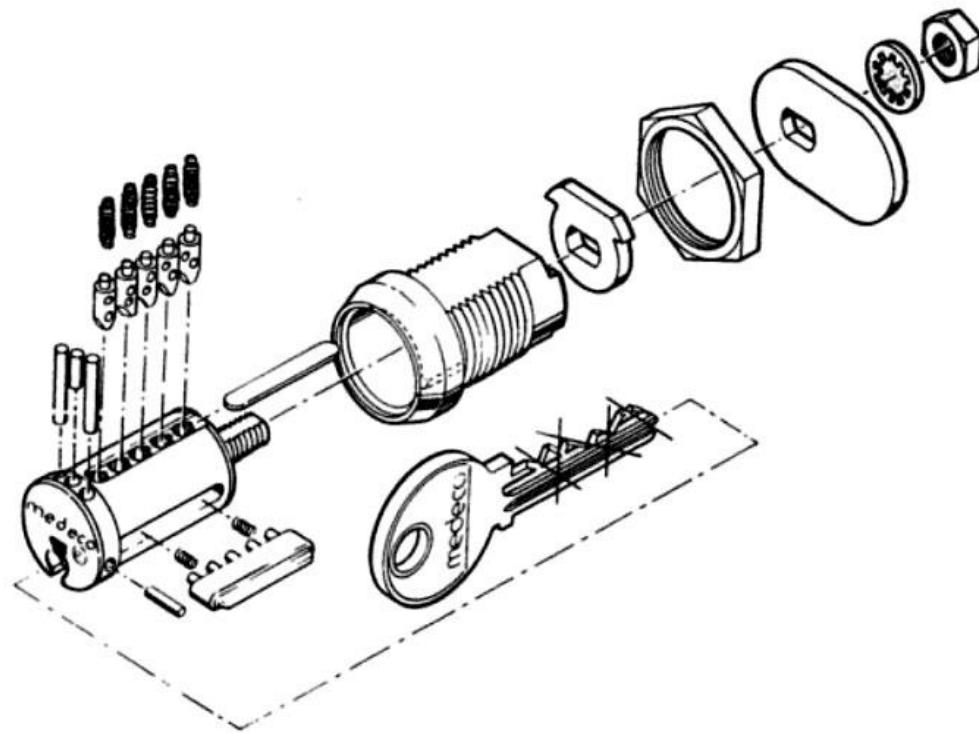
7-pin Tubular Key (unrestricted blank)



The Minnesota Key

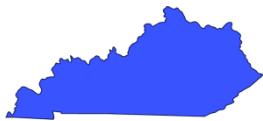
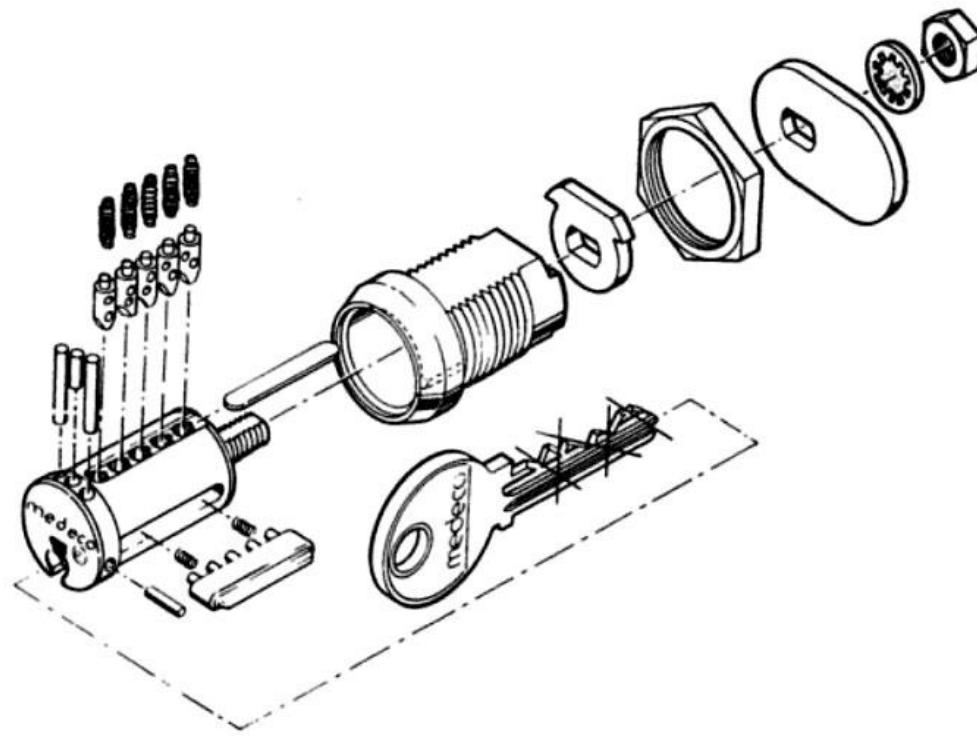
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Bitting Code: 1-1-7-[REDACTED]



The Kentucky Key Box





The Kentucky Key Box Medeco Classic Cam (restricted blank)

Fire Service



Fire Service

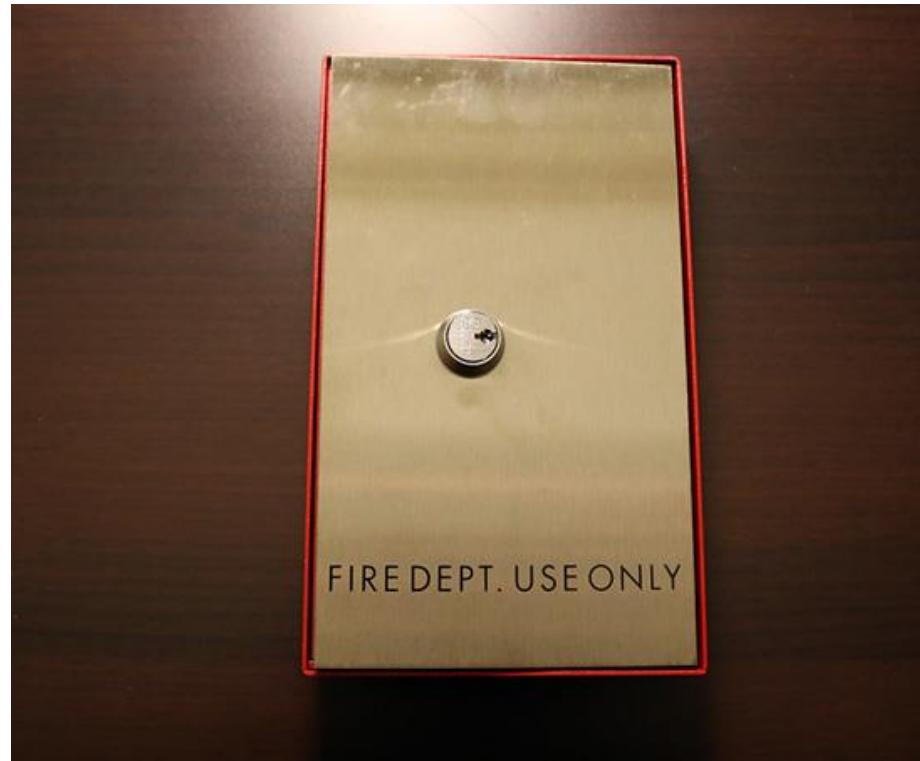


Fire Service



Fire Service





The Kentucky Key Box

Medeco Classic Cam (restricted blank)

Bitting: 5-4-3 [REDACTED] Sidebar: L-R-C [REDACTED]

Fire Service





The Florida Zone 4 Key





The Florida Zone 4 Key Medeco M3 Cam (restricted blank)





The Florida Zone 4 Key

Medeco M3 Cam (restricted blank)

Bitting: 4-4-5 [REDACTED]

Sidebar: B-B-S [REDACTED]





The Florida Zone 6 Key

Medeco M3 Cam (restricted blank)

Bitting: 4-4-5 [REDACTED]

Sidebar: B-D-C [REDACTED]





The Florida Zone 7 Key

Medeco M3 Cam (restricted blank)

Bitting: 4-4-5 [REDACTED]

Sidebar: B-D-N [REDACTED]





The Louisiana Key

Medeco M3 Cam (restricted blank)

Bitting: 4-5-4 [REDACTED] Sidebar: B-M-S [REDACTED]



The Virginia Key



Medeco M3 Cam (restricted blank)

Bitting: 5-5-4 [REDACTED]

Sidebar: K-D-S [REDACTED]

Fire Service



South Carolina, Connecticut, Rhode Island, Arizona

SC1000, BFD1, WD01, AZFS

we could do this all day ;-)

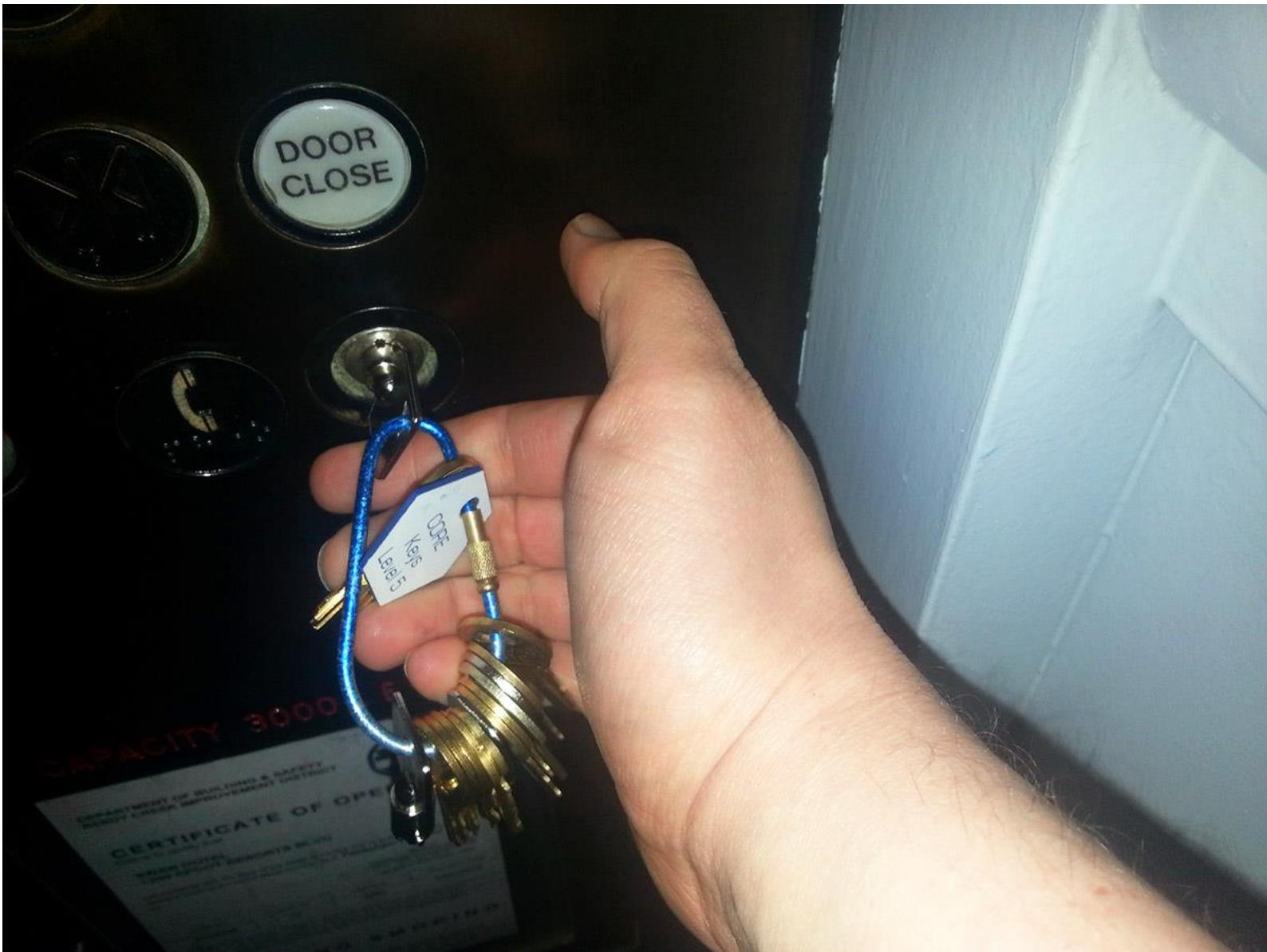
Fire Service



Elevator Keys



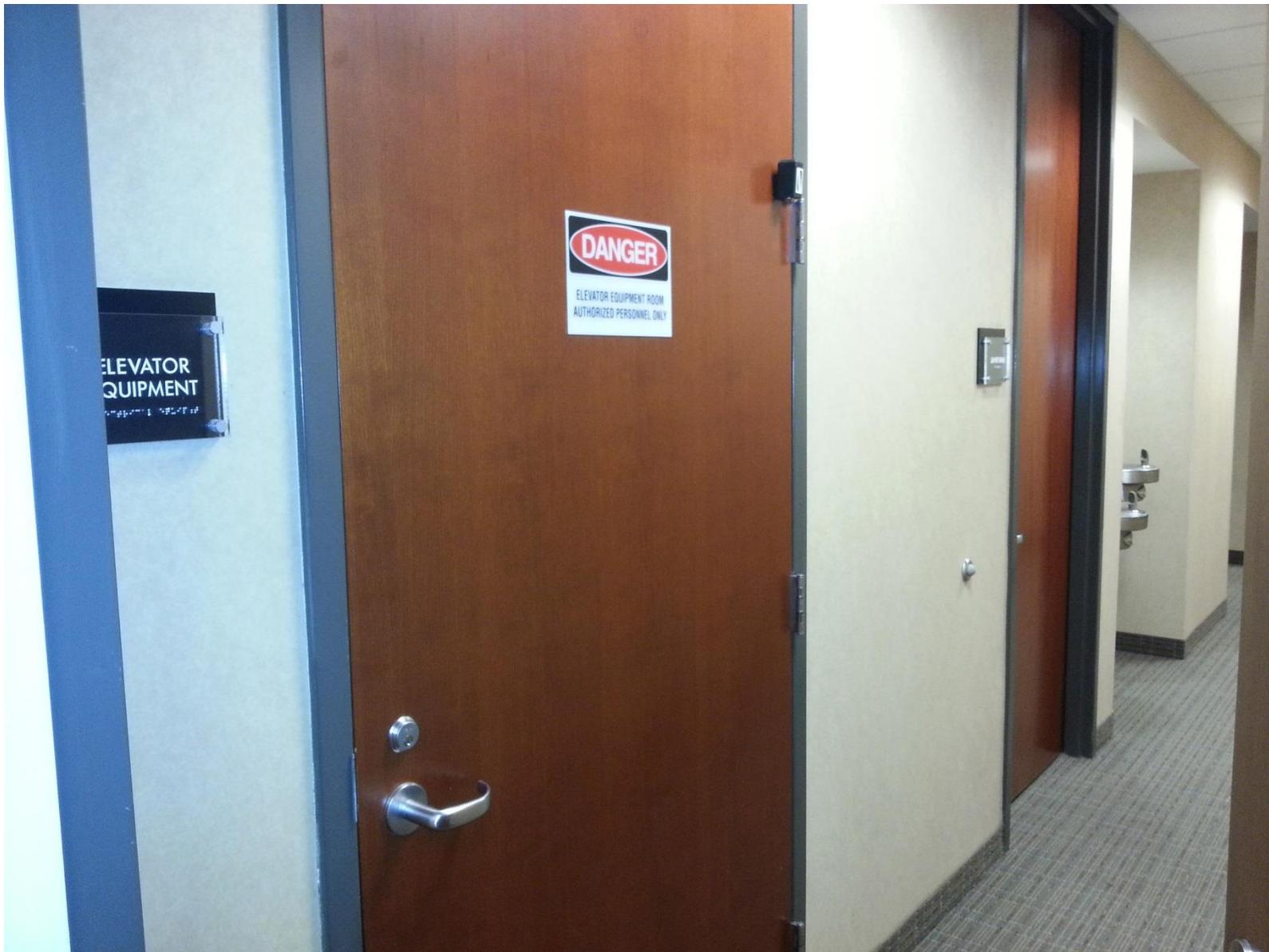
Elevator Keys



Key Control is an Issue



Key Control is an Issue



Key Control is an Issue



The FEOK1 Key

Hi! Sign in or register | Daily Deals | Gift Cards | Sell | Help & Contact

ebay Shop by category feok1 All Categories Refine your search for feok1

All Listings Auction Buy It Now Sort: Best Match View:

Categories

Business & Industrial (7)

- Other (6)
- MRO & Industrial Supply (1)

Collectibles (1)

- Tools, Hardware & Locks (1)

Condition see all

New (8)

Price \$ [] to \$ [] >

Format see all

All Listings (8)
 Auction (0)
 Buy It Now (8)

Item Location see all

Default
 Within 100 mil of 75137 >
 US Only
 North America
 Worldwide

8 results for feok1 + Follow this search

Kone 1 FEOK1 K1 Elevator Firefighter Operation Key
\$7.99 Buy It Now FAST 'N FREE
Free shipping Get it on or before Thu, Mar. 26



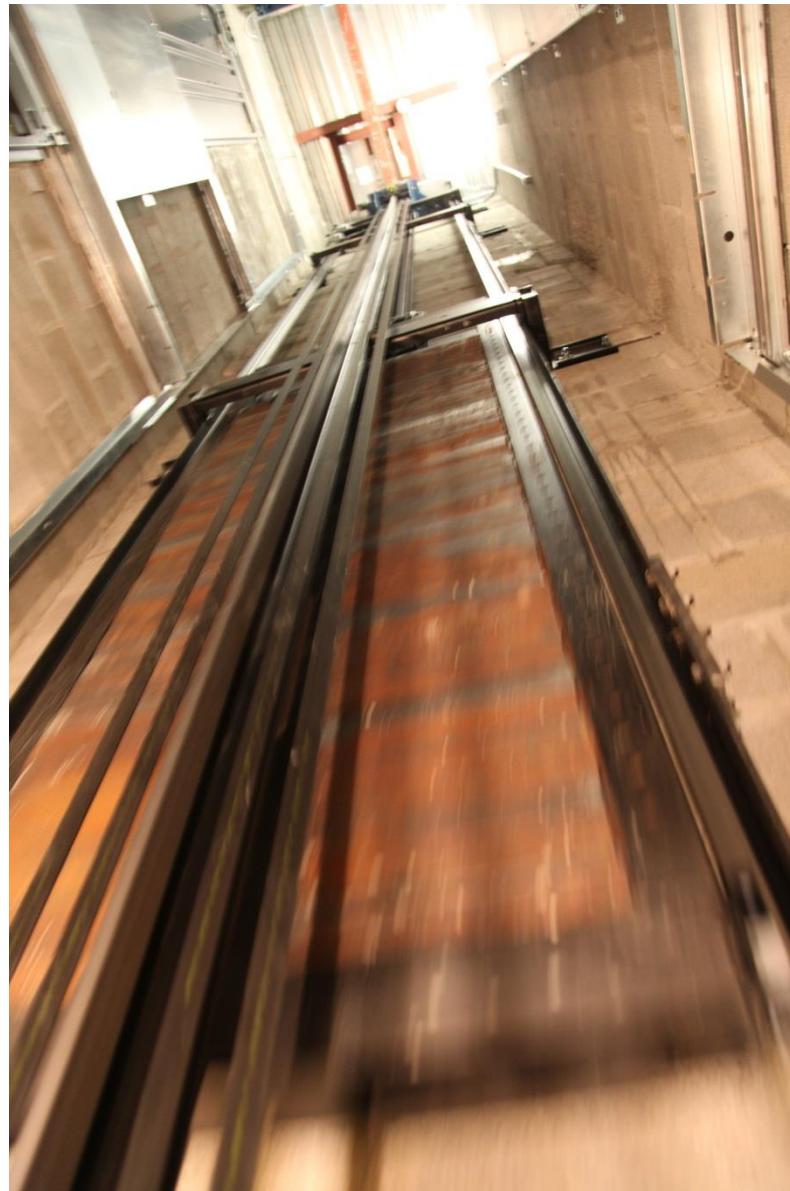
Two (2) FEOK1 / FEO-K1 Keys - Elevator Fire Service Key
\$13.50 Buy It Now



The FEOK1 Key



Hoistway Access



Hoistway Access



Escutcheon Holes



Escutcheon Holes



Door Releases



Escutcheon Holes



“It’s in that place where I put that thing that time.”



Escutcheon Locks



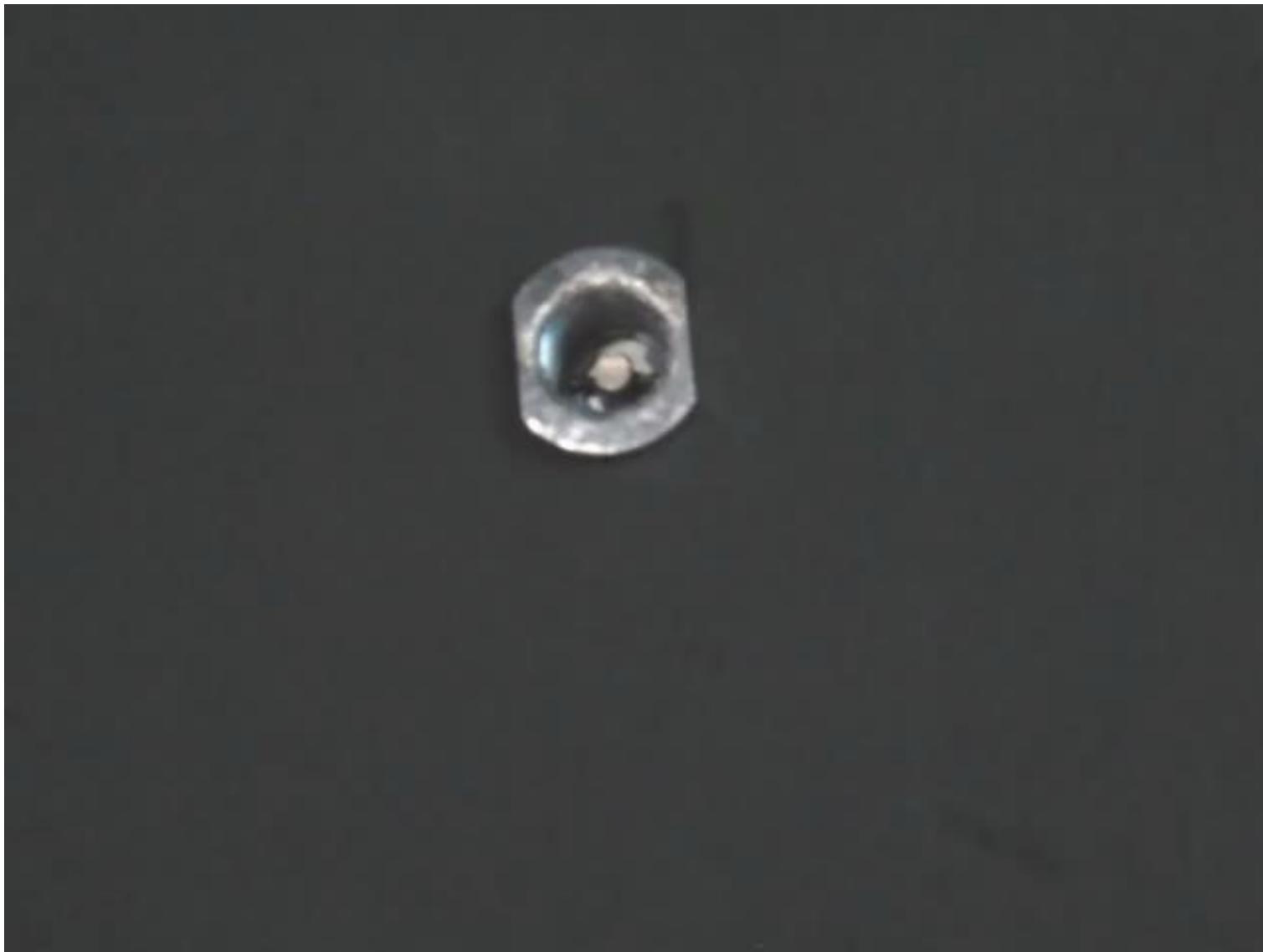
Escutcheon Locks



Escutcheon Locks



Escutcheon Locks



Escutcheon Locks



Escutcheon Locks



Escutcheon Locks



Escutcheon Locks



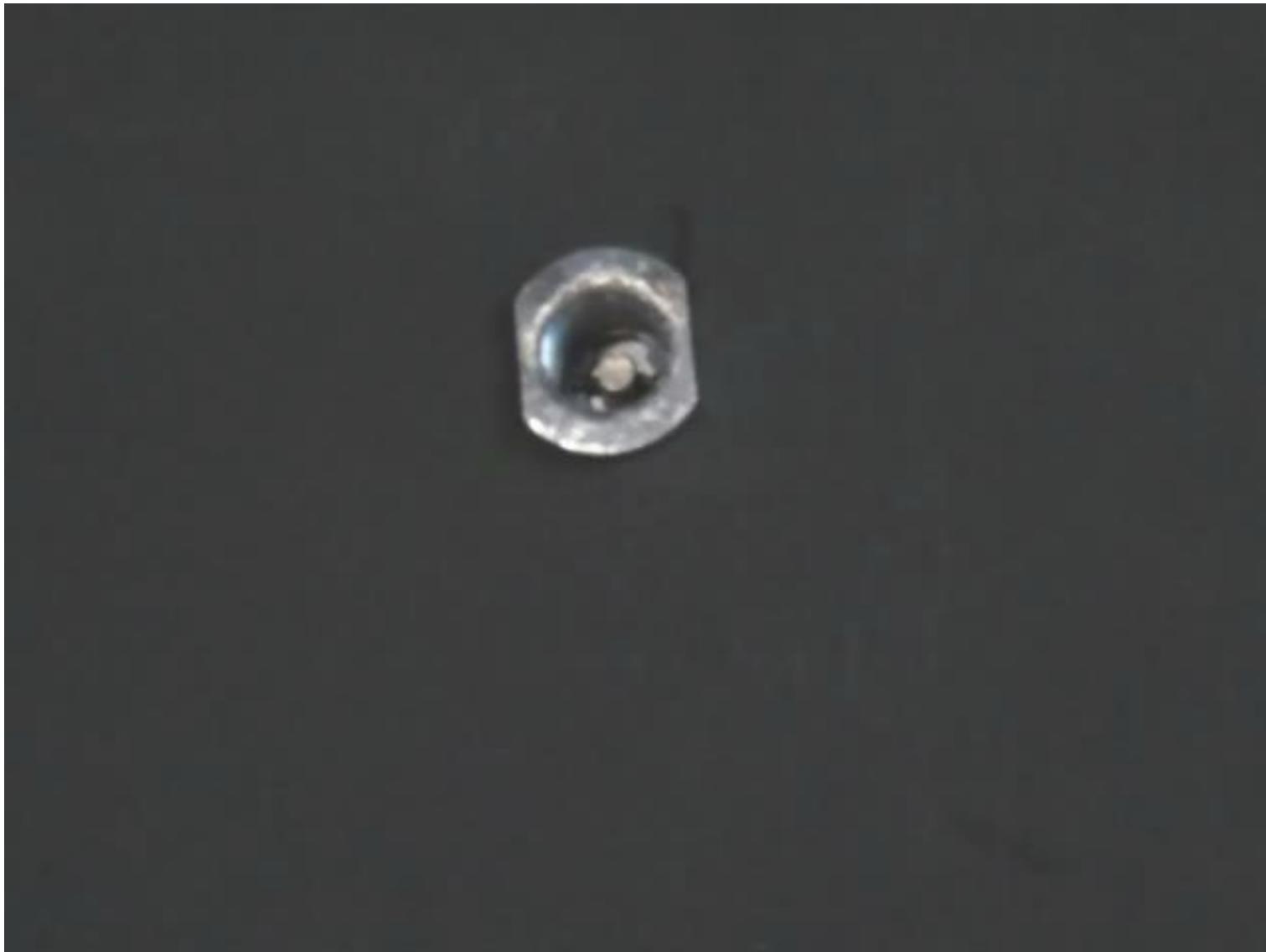
Escutcheon Locks



Escutcheon Locks



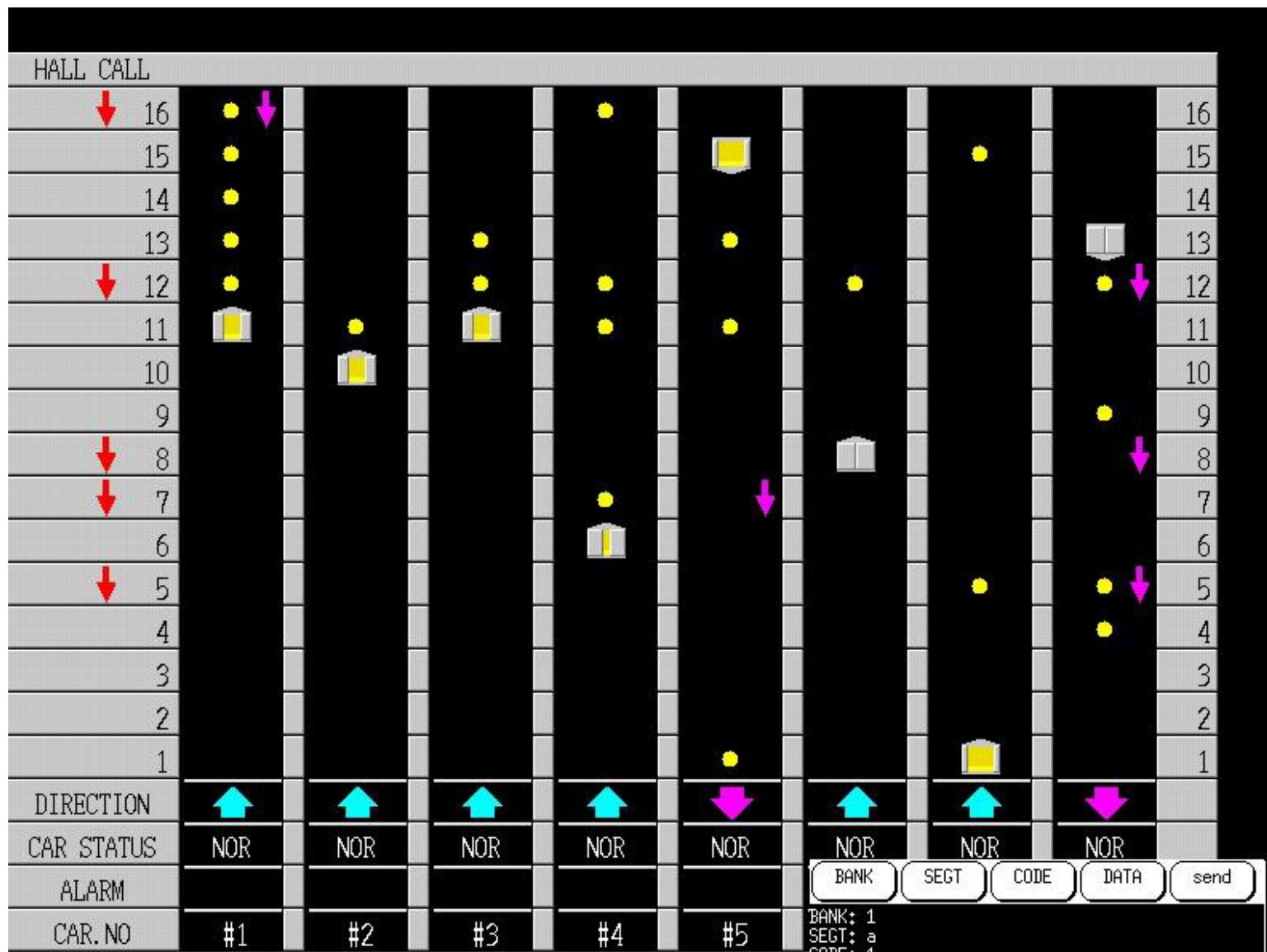
Escutcheon Locks



Machine Room – Direct Operation via the Controller



Machine Room – Direct Operation via the Controller



Machine Room – Hacking & Manipulating the Controller



Machine Room – Hacking & Manipulating the Controller



Machine Room – Hacking & Manipulating (5-Year Test)



How POTUS Rolls



OMG HAX



OMG HAX





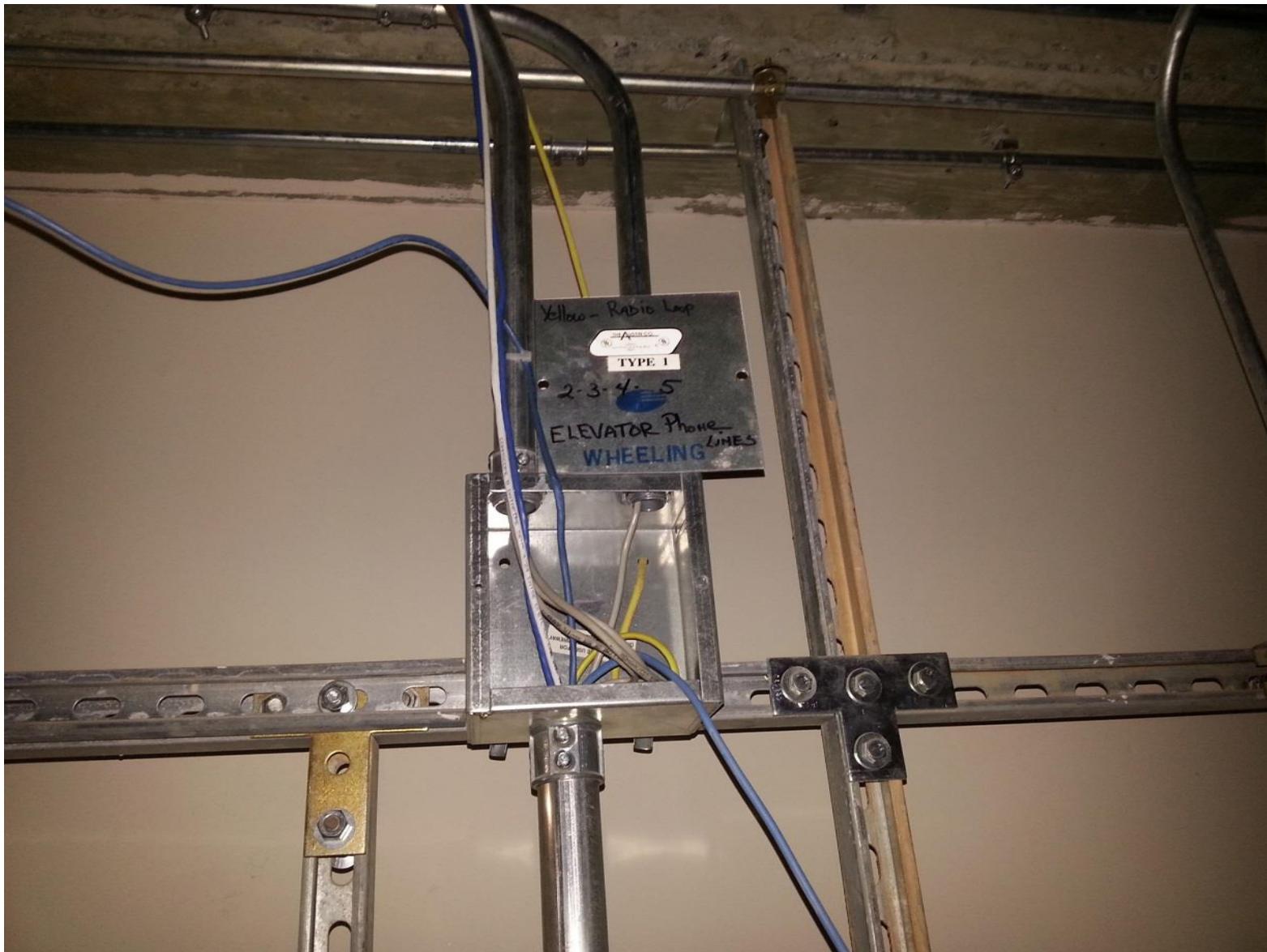
ELEVATOR PHONES



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators



Emergency Phones in Elevators





COMMON VIOLATIONS,
ISSUES, & GUIDANCE



Entrapments



Code Violations



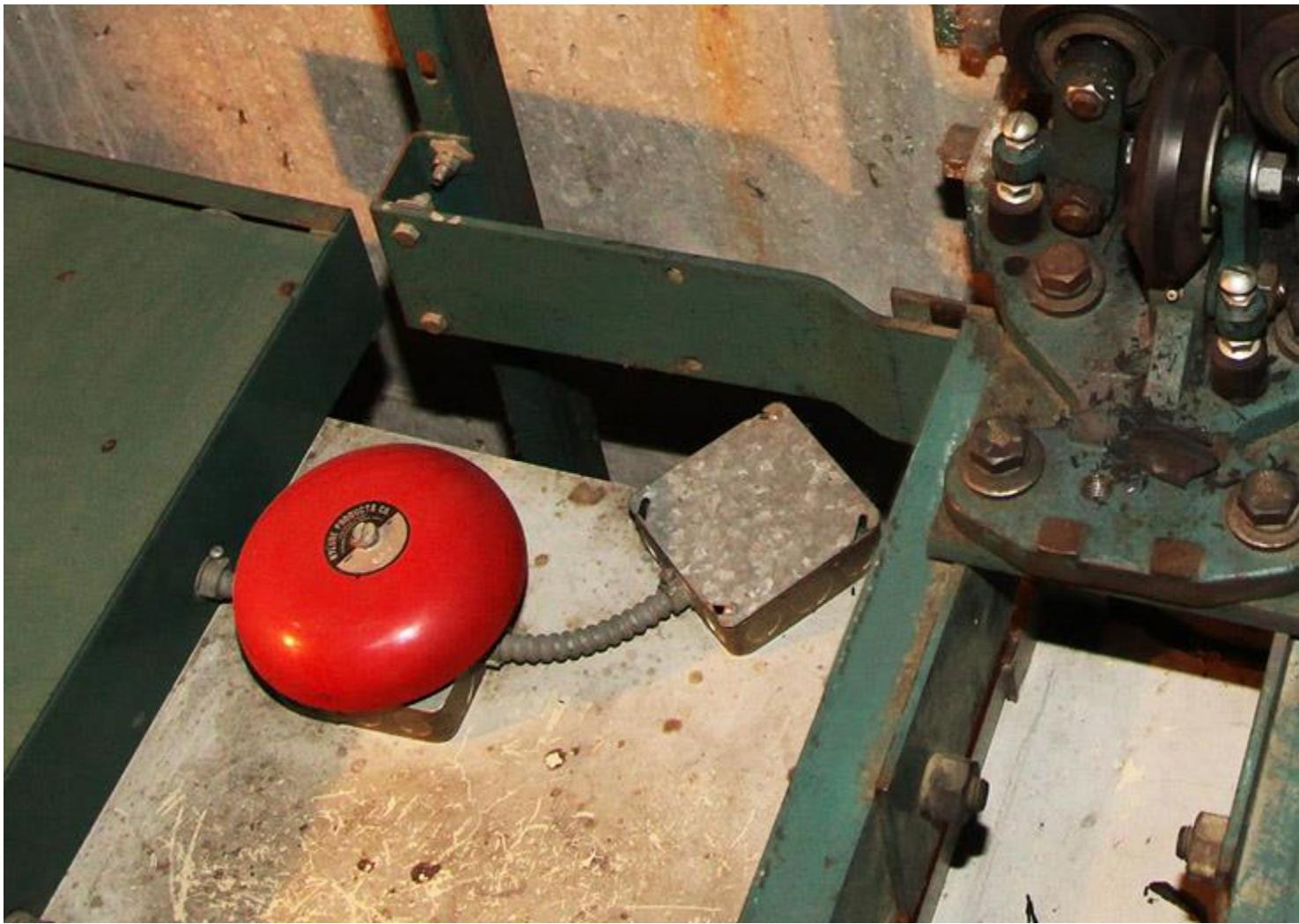
Code Violations



Phone Violations



Alarm Bell



"Assault" Switch



Improperly Secured Motor Rooms and Hoistways



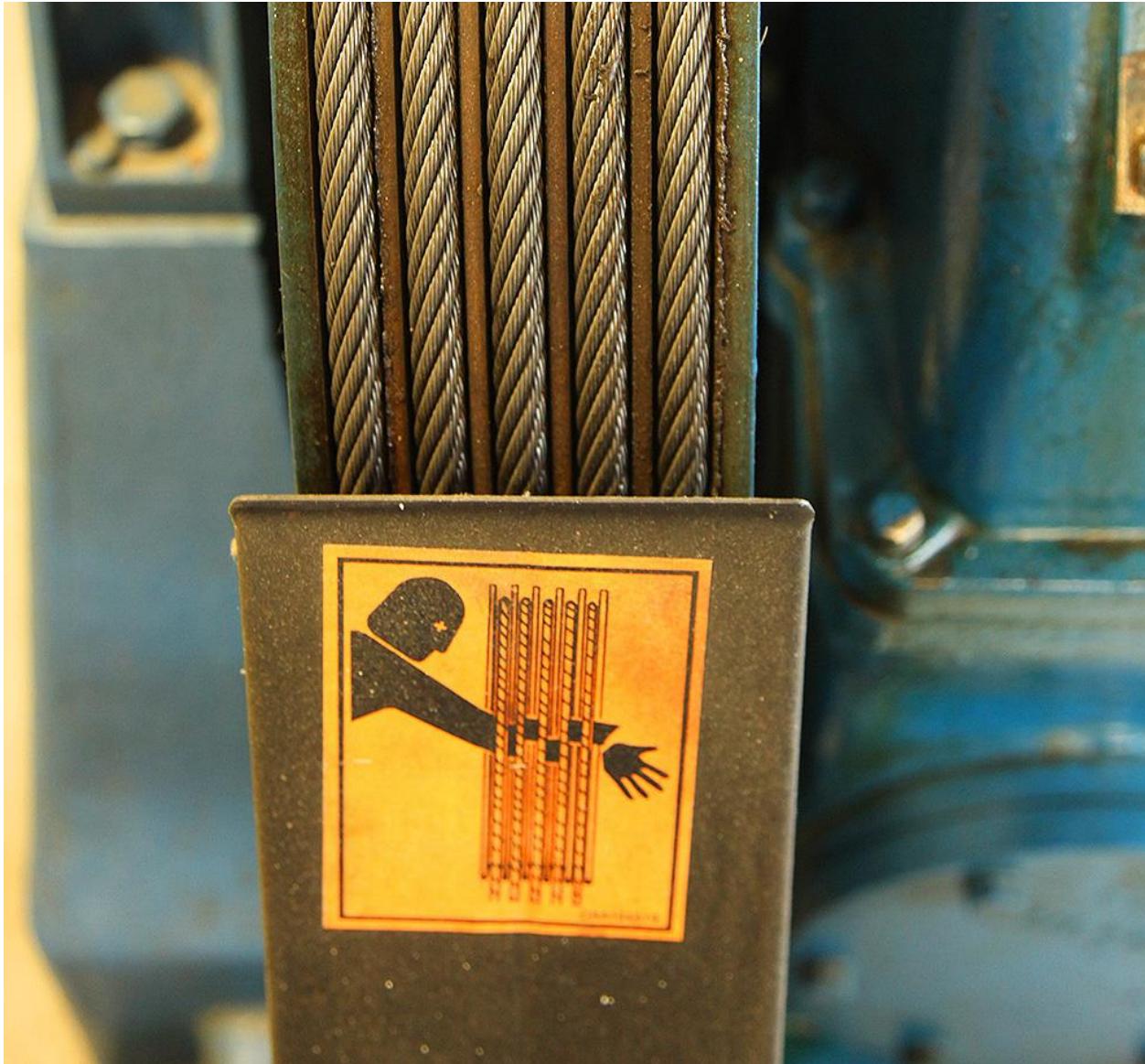
Improperly Secured Motor Rooms and Hoistways



Improperly Secured Motor Rooms and Hoistways



Improperly Secured Motor Rooms and Hoistways



Improperly Secured Motor Rooms and Hoistways



Know Who Your Contractor Is!



Oversight of Your Maintenance Control Program

ThyssenKrupp Elevator
SAFETY AND GOVERNOR TEST REPORT
(FILL OUT SEPARATE REPORT FOR EACH ELEVATOR)

DATE: 2-7-09
OFFICE: 075

NAME OF BUILDING: *Gardner* LOCATION: *CSP*
ELEVATOR SERIAL NO.: *00518000000000000000000000000000* CITY & STATE: *00000000000000000000000000000000*
(IF NONE USE MOTOR OR CONTROL SERIAL NO.) THYSSENKRUPP SERVICE CONTRACT NO.: *00000000000000000000000000000000*
BUILDING ELEVATOR NO.: *00000000000000000000000000000000* CUSTOMER P.O. NO.: *00000000000000000000000000000000*
JOB NO.: *00000000000000000000000000000000*

MAKE OF ELEVATOR: *Dreyfus* RATE CAR SPEED: *350* F.P.M. RATED CAPACITY: *3500* LBS.
SAFETY ROPE: *STEEL* GOVERNOR MFG.: *Voice*
TYPE OF GOVERNOR: *FLY BALL* FLYWEIGHT: *STEEL* TYPE GRIP JAWS: *STEEL* BRONZE
GOVERNOR ROPE: *IRON* *STEEL* 8X9 *6X19* SIZE (DIA.): *1/2* RATED ULTIMATE STRENGTH: *3000*
CONDITION OF ROPE: *GOOD* CONDITION OF JAWS: *GOOD*
TYPE OF SAFETY: *INSTANT* *WEDGE CLAMP* *FLEX. GUIDE* *OTHER* CONDITION: *GOOD* (TYPE)
CONTACT ON: GOVERNOR RELEASE CARRIER SAFETY RATED CAP. OF SAFETY: *3500*
CONDITION OF SAFETY DRUM ROPE: *GOOD* SIZE: *1/2*

* ANNUAL TEST ---- OMIT ITEM (3-4-6-18-19)
5-YEAR TEST ---- COMPLETE ALL ITEMS

INSTRUCTIONS:

To Comply with ANSI/AISME A17.1 Code Section 205, 204, 207, 208, 209, 1002, & 1003.

(1) Governor & safety free of any damage or indication, lift and dirt: Yes No
(2) Hand test manual governor to ensure smooth bearing and rubbing surfaces, including rope grip-jaws operate freely as intended:
(3) Force required to pull rope through governor jaws: *100* (Must be less than 20% of Rated Ultimate Strength.)
(4) Length required to pull governor rope from the release carrier: *100* (Can be no more than 60% of pull-through force.)
(5) Car Safety operated by tripping governor by hand with car operating at slowest possible speed in down direction, no load:
(6) Safety checked and tested with rated cap: *3500* lbs. evenly distributed over platform area, (Gov. & safety switch made inoperative)
rope grip-jaws tripped by hand at rated speed: *100* fpm, or over speed: *100* fpm
Switch trip spd: *100* fpm. Jaw trip spd: *100* fpm
(7) Did the car stop level: Yes No How much out of level: *0* D.B.G. *0* f.p.m.
(8) Length of cable pulled off the drum: *100* Number of turns of cable left on the drum: *100* Max. 3/8" per ft.
(9) Governor and safety reset, safety drum rewound evenly: *100* Safety jaw clearance: *100*
(10) Inspect the length of the mark on the guide rails made by the safety jaws in inches: Left rail: *100* inches. Right rail: *100* inches.
(11) Rails inspected and filed where necessary: Yes No
(12) Was it necessary to readjust the governor? Yes No
(13) Condition of governor rope after test: *GOOD*
(14) Governor adjustments sealed and tagged and Release Carrier tagged: Yes No
Was the test satisfactory: Yes No

(15) Normal and Final Terminal stopping devices tested:
(16) Standby (Emergency) Power Operations tested (with 125% of Rated Load on Acceptance and 5 Year Tests):
(17) Power Door System tested: Torque: *100* ft. # *100* ft. # Kinetic: *100* ft. #
(18) Brake tested with 125% of Rated Load Rule 207.8 shall lower, stop and hold the car at its lowest terminal with 125% of Rated Load: *100*
(19) Emergency Terminal Speed Limiting Devices tested: *100*

Representatives of the Insurance Company, City or State Inspector or Owner, present at test: Yes No

(Indicate name and title)
MECHANIC'S SIGNATURE _____
SUPT. SIGNATURE _____
Copy of this report given to customer: Yes No
MASGTR0301
CUSTOMER'S SIGNATURE *John*

Oversight of Your Maintenance Control Program

Traction Maintenance Tasks (A17.1-2007 8.6.4)													
Printed Name For the Year <u>2013</u> and Month Starting <u>Jan</u>		Maintenance Log											
Assigned Number of Visits		1	2	3	4	5	6	7	8	9	10	11	12
Date		1-15	2-19	3-21	5-10	7-17	8-21	9-19	10-22	12-10			
During each maintenance visit, observe and adjust/maintain as necessary:													
Annually inspect these items and observe and adjust/maintain as necessary:													
Additional Notes:		Fire Service											

Oversight of Your Maintenance Control Program

Hydraulic Test Records							
INSTRUCTIONS: (1) Use one record for each controller. (2) When any section of the Maintenance Tasks & Records is complete or full, replace with a new Maintenance Tasks & Records. (3) Turn in all complete or full Maintenance Tasks & Records to Branch Office for filing.							
Hydraulic Internal Audit Record							
Date	Auditor	Title					
Elevator # 2 Hydraulic Oil Machine Room Log							
If the reason for the missing oil cannot be determined by visual inspection, the unit must be taken out of service (lock-out/tag-out) until cause is determined, corrected, and tested per ASME A17.1 by relief valve setting and system pressure test and cylinder leak down test.							
Date	Additional Oil Amount	Cause	Technician				
Complete the following information after performing Category One (1) Tests							
	Date	Conducted By	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified	
8.11.3.2.1 – Relief Valve Setting and System Pressure Test						Yes / No	
8.11.3.2.2 – Hydraulic Cylinders and Pressure Piping						Yes / No	
8.11.3.2.3 – Additional Tests							
8.11.3.2.3(a) – Non-Emergent Terminal Stopping Devices						Yes / No	
8.11.3.2.3(b) – Governors, Overspeed Switch, and Seats						Yes / No	
8.11.3.2.3(c) – Safeties						Yes / No	
8.11.3.2.3(d) – Oil Buffers						Yes / No	
8.11.3.2.3(e) – Firefighter's Emergency Operation						Yes / No	
8.11.3.2.3(f) – Standby Power Operation						Yes / No	
8.11.3.2.3(g) – Power Operations of Door System						Yes / No	
8.11.3.2.3(h) – Emergency Terminal Speed Reducing Devices						Yes / No	
8.11.3.2.3(i) – Low-Off Protection Operation						Yes / No	
8.11.3.2.4 – Flexible Hose and Fitting Assemblies						Yes / No	
8.11.3.2.5 – Pressure Switch						Yes / No	
Complete the following information after performing Category Three (3) Tests							
Test	Date	Conducted By	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified	
8.11.3.3.1 – Unexposed Portions of Pistons (roped hydro)						Yes / No	
8.11.3.3.2 – Pressure Vessels						Yes / No	
Complete the following information after performing Category Five (5) Tests							
Test	Date	Conducted By	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified	
8.11.3.4.1 – Governors, Safeties, and Oil Buffers (roped hydro)						Yes / No	
8.11.3.4.2 – Coated Ropes (roped hydro)						Yes / No	
8.11.3.4.3 – Wire rope fastenings (roped hydro)						Yes / No	
8.11.3.4.4 – Plunger Gripper						Yes / No	
8.11.3.4.5 – Overspeed Valves						Yes / No	
Other/Additional Testing							
Test	Date	Conducted By	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified	
						Yes / No	

SAFETY TEST FORM						
Inspector Type: <input type="checkbox"/> Annual <input type="checkbox"/> 5 Year Inspector # _____ MD State Registration # _____ Date of Applicable Code used _____						
SITE DATA Site Name (Individual, Partnership, Corporation) _____ County _____ Site Street Address _____ Site City, State, Zip _____						
Unit Class: <input type="checkbox"/> Passenger <input type="checkbox"/> Freight <input type="checkbox"/> SW <input type="checkbox"/> DW Elevator Type: Traction <input type="checkbox"/> Hydraulic <input type="checkbox"/> Drum <input type="checkbox"/> Rack & Pinion <input type="checkbox"/> TO <input type="checkbox"/> TB <input type="checkbox"/> HO <input type="checkbox"/> HB <input type="checkbox"/> DO <input type="checkbox"/> DB <input type="checkbox"/> Elec <input type="checkbox"/> Hyd <input type="checkbox"/> Roped Hydraulic <input type="checkbox"/> Hand <input type="checkbox"/> Other						
Type of Test: <input type="checkbox"/> Car Safety <input type="checkbox"/> Counter Weight Safety <input type="checkbox"/> A <input type="checkbox"/> Governor <input type="checkbox"/> Oil Buffer <input type="checkbox"/> B <input type="checkbox"/> Rack & Pinion <input type="checkbox"/> Relief Valve <input type="checkbox"/> None <input type="checkbox"/> C						
CWT Run-By CAR Run-By Bottom _____ ft. _____ in. Maximum Design CWT Run-By Bottom _____ ft. _____ in. Top _____ ft. _____ in.						
Sign Posted on CWT Guard or Hoistway Wall? <input type="checkbox"/> Yes <input type="checkbox"/> No Actual Gov Trip Speed CAR _____ FPM CAR _____ FPM Pullout Length: _____ ft. CWT _____ FPM CWT _____ FPM						
125% Rated Load Test? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA Rated Load Test? <input type="checkbox"/> Yes <input type="checkbox"/> No Slide on Rails: Slide minus Safety Shoe = _____ ft. _____ in.						
# of Turns on Drum:	Slack Cable SW: <input type="checkbox"/> On Car <input type="checkbox"/> On Machine <input type="checkbox"/> NA	Governor/Valve Sealed By: <input type="checkbox"/> State <input type="checkbox"/> Elevator Company	Emergency Brake Operation <input type="checkbox"/> Unintended Movement <input type="checkbox"/> Ascending Car			
<input type="checkbox"/> NA	Pull Through _____ Lbs. <input type="checkbox"/> Oil <input type="checkbox"/> Spring <input type="checkbox"/> Other	Pull Out _____ Lbs. <input type="checkbox"/> Spring <input type="checkbox"/> Other	Type of Car Buffer:	Type of CWT Buffer:		
Type of Governor: <input type="checkbox"/> Centrifugal <input type="checkbox"/> Fly Ball <input type="checkbox"/> Rack & Pinion <input type="checkbox"/> None Plunger Returned in 90 seconds: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		Fireman Service Tested? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Relief Valve Opened: _____ psi Empty Pressure: _____ psi			
<input type="checkbox"/> No <input type="checkbox"/> NA		# of Smokes _____ Phase I # of Shunts _____ Phase II	Static Pressure: _____ psi Working Pressure: _____ psi			
Static Drift Test: _____ in. _____ min.		Emergency Power Tested? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Battery Lowering device? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA			
NAME OF ELEVATOR COMPANY: _____ SIGNATURE OF COMPANY REP: _____ DATE: _____ SIGNATURE OF INSPECTOR: _____						

Maintenance LOLWUT?



Maintenance LOLWUT?



Maintenance LOLWUT?



Maintenance LOLWUT?



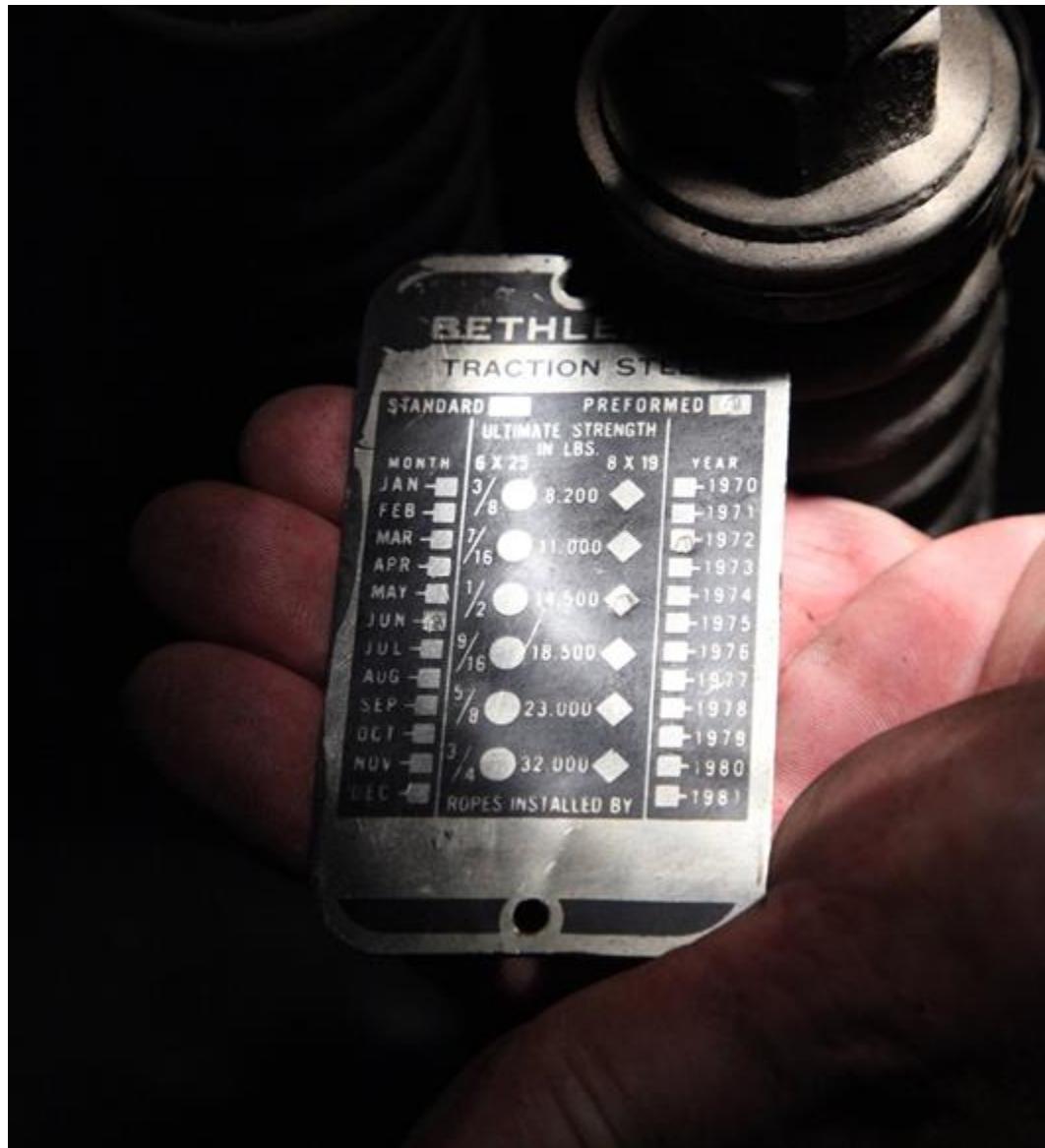
Conflicts of Interest



Be Wary of Bullshit Service



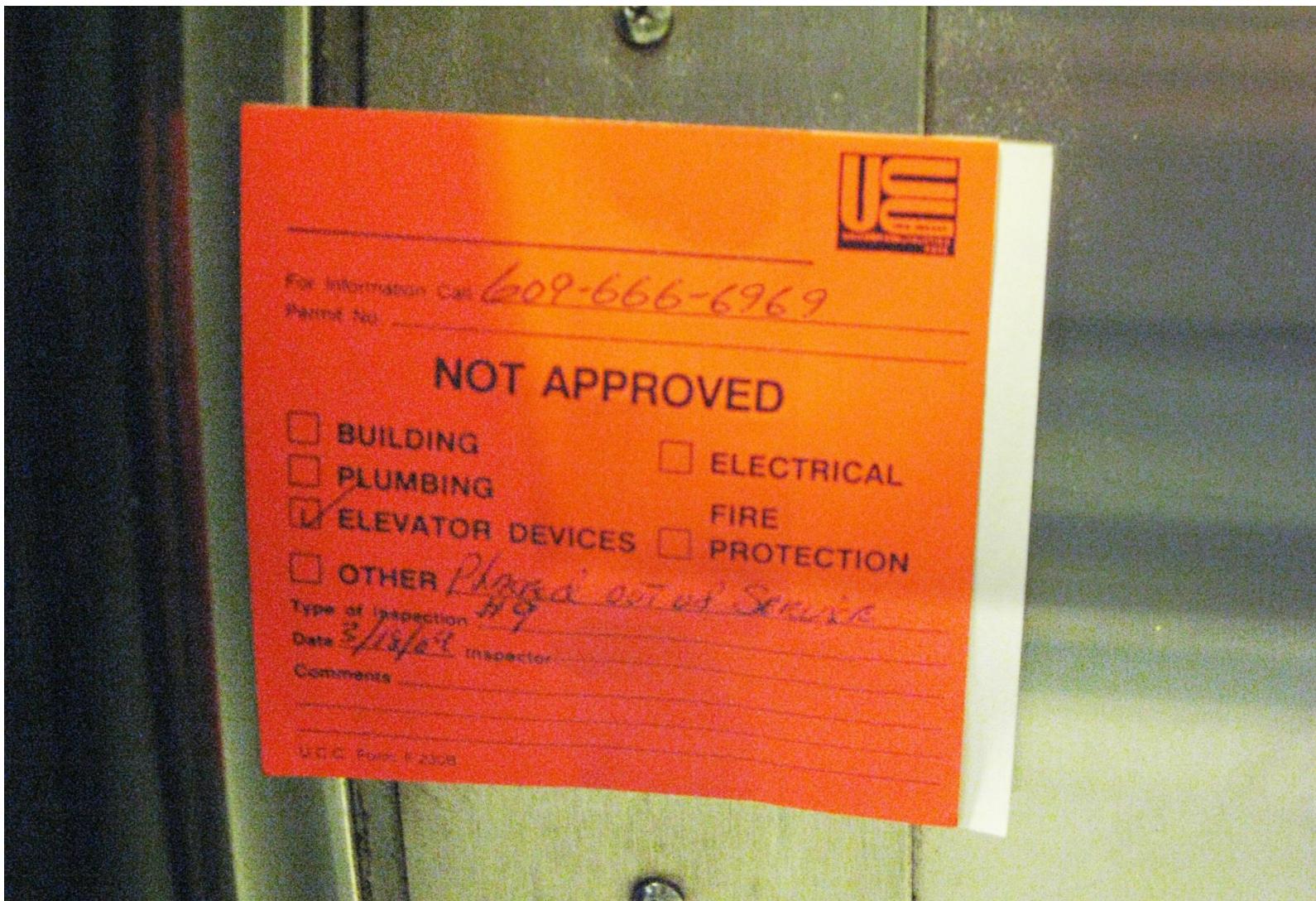
Be Wary of Bullshit Service



Be Wary of Bullshit Service



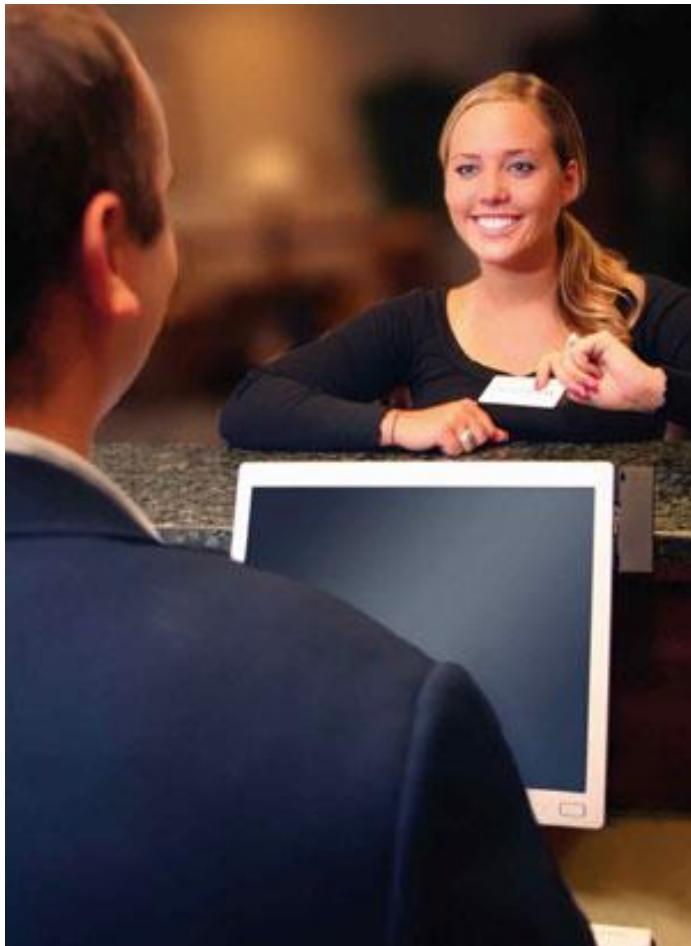
Be Wary of Bullshit Service



Tests Are Important!



Follow All of Your Building Procedures



Is Your Security Guard...



...Just An Elevator?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



What's the Worst that Could Happen?



There are Elevator Techs



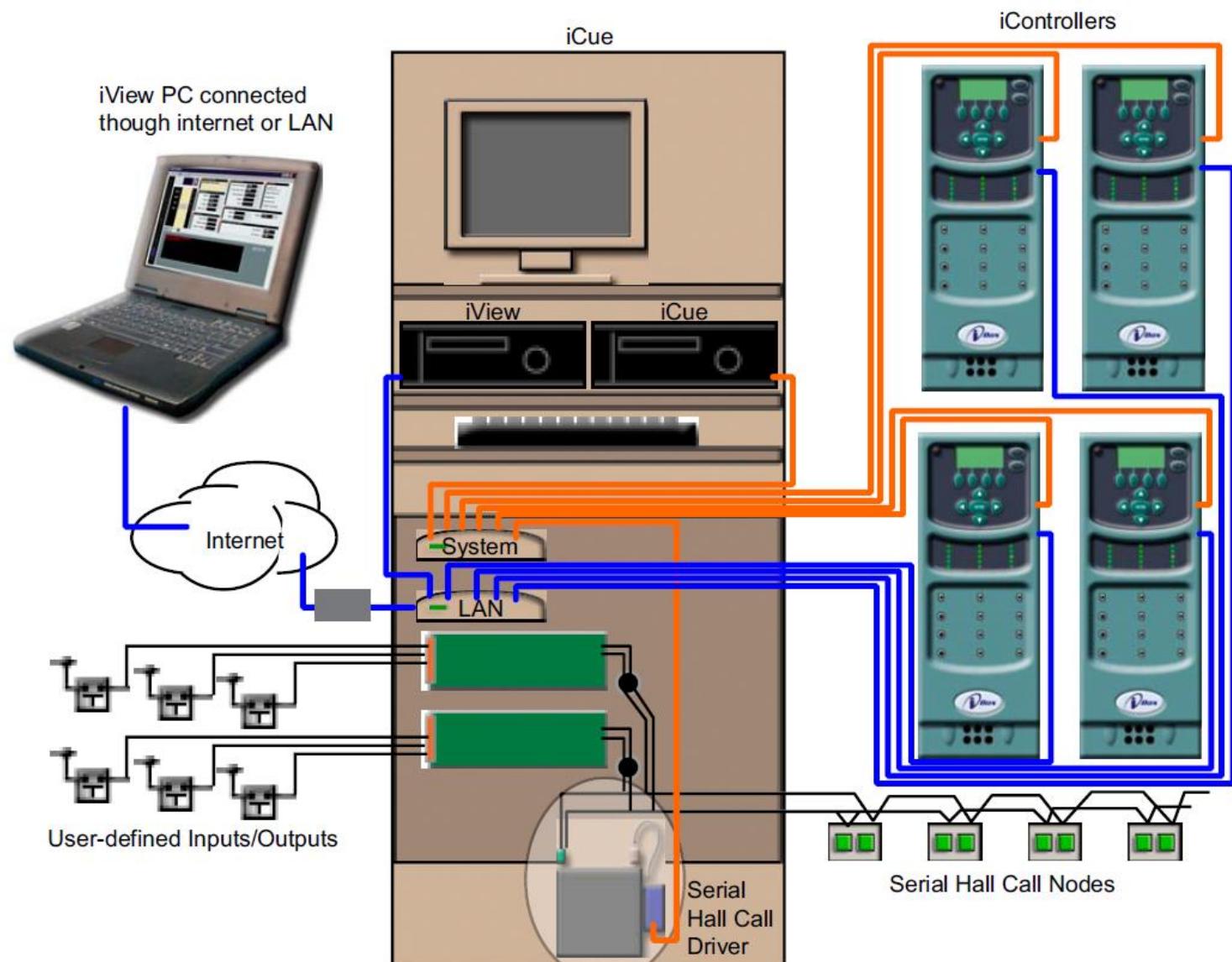
And There are Elevator Techs who are Security Consultants



Howard Payne
Elevator Investigator



"I Don't Want My Elevator on the Internet but I Want Monitoring"

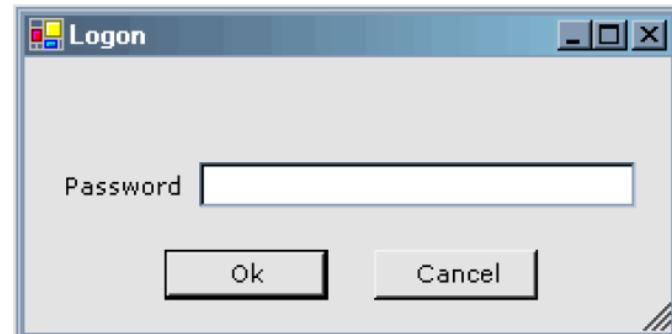


"I Don't Want My Elevator on the Internet but I Want Monitoring"

Configuring Security

iView allows you to restrict elevator travel through the building by controlling hall and car call registration to the elevator group. Access to security settings beyond viewing general status is restricted to authorized users. There are two user classes, manager and technician. The manager is allowed to set up and edit passwords, the technician is not. To log on:

1. Click on the Logon button at the bottom of the screen.
2. Enter the manager or technician password. (Factory default passwords are "manager" for manager logon and "technician" for technician logon.)
3. Click OK. Menus that were previously grayed-out will become available.

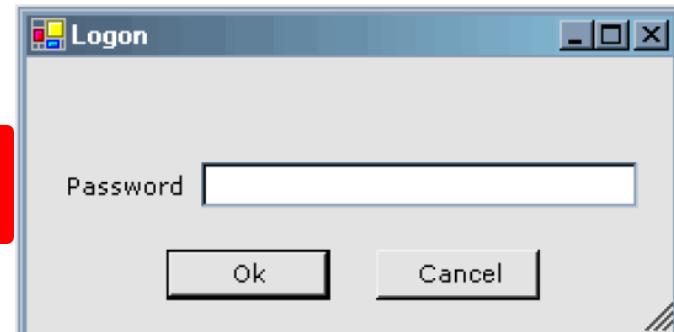


"I Don't Want My Elevator on the Internet but I Want Monitoring"

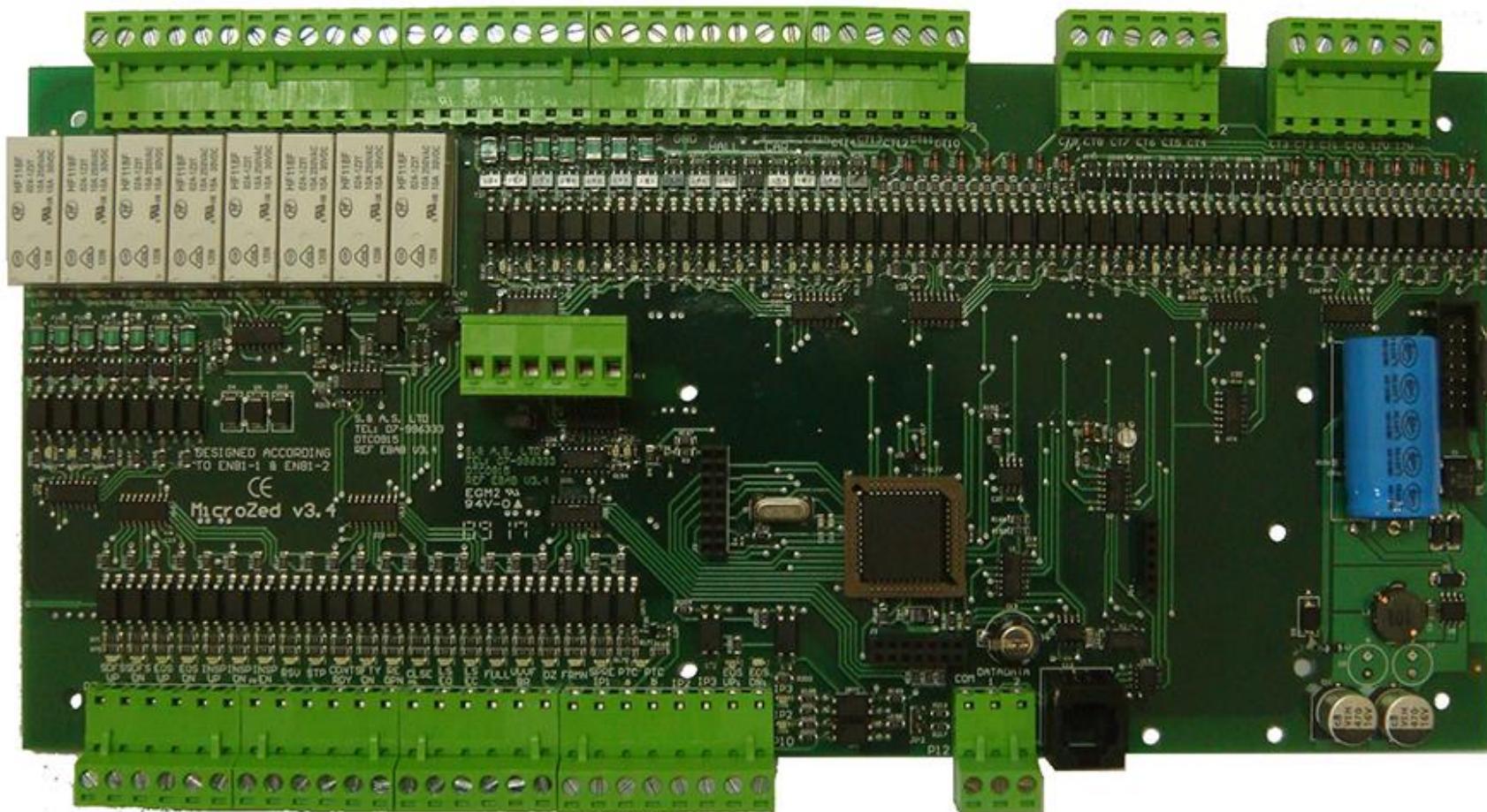
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3. Click OK. Menus that were previously grayed-out will become available.



"I Don't Want My Elevator on the Internet but I Want Monitoring"





FINAL TIPS

PREVENTING & CORRECTING PROBLEMS



If Someone (Including You) Is Stuck in an Elevator



Follow These Simple Steps...

1. Don't Panic



Follow These Simple Steps...

1. Don't Panic

- Main lights off? You don't have many options (emerg. call)
- Main lights on? Try the following...

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open (exit safely if doors open)

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again
4. Try Placing Calls to Other Floors, Including Lobby

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again
4. Try Placing Calls to Other Floors, Including Lobby
5. Make Sure You're Badged In, Try Floor Calls Again

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again
4. Try Placing Calls to Other Floors, Including Lobby
5. Make Sure You're Badged In, Try Floor Calls Again
6. If Authorized, Try Using Keystrokes (IND Mode)

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again
4. Try Placing Calls to Other Floors, Including Lobby
5. Make Sure You're Badged In, Try Floor Calls Again
6. If Authorized, Try Using Keyswitches (IND Mode)
7. Verify the Cab Doors Are Closed

(Unless you heard something loudly fail)

Follow These Simple Steps...

1. Don't Panic
2. Press Door Open
3. Press Door Close, Then Press Door Open Again
4. Try Placing Calls to Other Floors, Including Lobby
5. Make Sure You're Badged In, Try Floor Calls Again
6. If Authorized, Try Using Keyswitches (IND Mode)
7. Verify the Cab Doors Are Closed
8. If Nothing Worked, Call For Help

(Emergency Phone or Mobile Phone or Radio)

Things To NEVER Try When Stuck...

1. Leaving Through the Top Hatch

- *It's dangerous*
- *It will foul up other procedures*



Things To NEVER Try When Stuck...

1. Leaving Through the Top Hatch
2. Exiting a Mis-Leveled Car
 - *If you have to jump, that's too far!*



Things To NEVER Try When Stuck...

1. Leaving Through the Top Hatch
2. Exiting a Mis-Leveled Car
 - *If you have to jump, that's too far!*



Things To NEVER Try When Stuck...

1. Leaving Through the Top Hatch
2. Exiting a Mis-Leveled Car

- *If you have to jump, that's too far!*
- *Wait for trained professionals!*



Things To NEVER Try When Stuck...

1. Leaving Through the Top Hatch
2. Exiting a Mis-Leveled Car
3. The Safest Place to Be is in the Elevator Itself



Thank You Very Much!



delta@enterthecore.net

@deviantollam

@TCGsec

howard@payneellevator.com

@sqthowardpayne