ELEVATORS 101

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If this looks familiar,

Then you’ve got a problem
Topics

- Types of elevators and proper application
- Preventive Maintenance
- Safety and Code Issues
- New Products and Innovations
- Modernization
  - Proprietary vs. Non-Proprietary
- Questions
Types of Elevators – Hydraulic

- Holed Hydraulic
- Roped Hydraulic
Types of Elevators-Hydraulic

- Twinpost Holeless
- Twinpost Telescopic (2-Stage)
- Twinpost Telescopic (3-Stage)
Types of Elevators - Traction

- Gearless for High Rise
- Geared for Mid Rise
Machine Room Less (MRL)

Advantages

Disadvantages
Elevator Quiz

- Can an elevator fall?
  - Hydraulic Elevator s  - Yes (not roped hydraulic)
  - Traction elevators – No, unless all the hoist ropes and governor rope are severed.
Preventive Maintenance

Telltale Signs & What to look for:

1. General Cleanliness
2. Excessive Service Calls & Shutdowns
Ask Questions and find out

- Frequency of visits and how long are they there on a visit?
  - Trend is fewer visits and less time on the job

- Geographic territory of your service technician?
  - Response to a problem
  - Are you paying for windshield time or elevator maintenance?

- What is the philosophy of Maintenance?
  - Usage based (dynamic) or Calendar based (static)
Ask Questions and find out – cont.

- What is the performance guaranty?
  - 90 days, 30 days, less ???

- What is their incentive to do a good job?
  - Will they cover excessive service calls or will you be nickel and dimed?

- The bottom line – if it seems too good to be true, it usually is and you get what you pay for.
The “Gotchas”

- Look out for –
  - Obsolescence
  - Overtime Service Calls
  - Code Violations
  - Safety Concerns – The “Shotgun” approach

- What to do? – Always get a 2\textsuperscript{nd} or 3\textsuperscript{rd} opinion
  - Talk to your City Elevator Inspector
Obsolescence

- Relay Logic Controllers
  - Guardian Relays
- Mechanical Selectors
  - Star wheel
- 1st Generation (1980’s) Microprocessor controls
- Control Valves – 20+ years old
- Shut off valves
Single Bottom Cylinders
### Unit Record Log – Oil Use

<table>
<thead>
<tr>
<th>Date</th>
<th>Initials</th>
<th>Oil Level in tank, car at bottom landing*</th>
<th>Added Gallons</th>
<th>Reason Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Jan 09</td>
<td>PS</td>
<td></td>
<td>5 gal</td>
<td>blinds at 7 pm</td>
</tr>
</tbody>
</table>
Elevator Quiz

- Name the two most common elevator accidents
  - Door Strikes
  - Elevator missing floor level
Hopefully you have not seen this!
Or this!
Must Haves for Every Elevator

Door Restrictors to deter passengers from opening the doors when the elevator is between floor landings.
Infrared Door Protection
Door Unlocking Device

- Hoistway Door Keyway
  (Where allowed by code)
  Allows access to the hoistway if the elevator is not at the landing.
  The hoistway should be accessed only by elevator or emergency personnel.
ADA Emergency Phone
Electronic Soft Start for Motors
Power Unit Upgrade
New Products

ThyssenKrupp Elevator and Microban International, the foremost leader in antimicrobial technology, have entered into a mutually exclusive agreement to provide signal fixtures manufactured with Microban® protection. Microban antimicrobial product protection resists the growth of odor and stain causing bacteria. Fixtures that stay cleaner and fresher for longer periods reduce the environmental impact caused by more frequent cleaning and product replacement. And because Microban is built-in during the manufacturing process, it won’t wash off or wear away, giving you durable antimicrobial protection that lasts.

MICROBAN is a registered trademark of Microban Products Company.
Regenerative Drives, Destination Dispatching & TWIN (two elevators, one hoistway)

Returns power back to the building, reducing energy use and machine room cooling requirements.
Elevator Quiz – TRUE or FALSE

1. Pushing the “up” and “down” buttons at the same time is the fastest way to call an elevator.
   - TRUE and FALSE

2. Repeatedly pushing the call button will make the elevator respond faster.
   - FALSE, in fact, you might break the button and shut the elevator down.

3. The Elevator is required to be within ¼” of the floor landing when it stops
   - False – ½”
When is it time to modernize?

1. Performance concerns
2. Safety or Code concerns
3. Aesthetic concerns
4. Obsolescence forces your hand
5. You should never modernize because of lack of maintenance.
What is a modernization?

1. New controls (the brains) is the main component.

2. New motor/machine (traction) or hydraulic power unit (motor, pump & valve).

Aesthetic changes
Factors to consider when modernizing

1. Code requirements – everything must be brought up to date, Grandfather clause is erased.
   - Hoistway Door fire rating (stickers must be present)
   - Rope Grippers
   - Fire Service Operation

2. Work by Others
   - Smoke Sensors
   - Ventilation of Hoistway
   - Sump pump in elevator pit
     - Where to evacuate
     - Asbestos or lead paint

3. ADA requirements – call buttons lowered, bells and whistles
What’s Included?

- New Controls (microprocessor)
- New AC Motor or Power Unit
- New Signal Fixtures
- New Door Operator & Door Protection Device, maybe door hardware. (Locks, closers, tracks, clutch, rollers)
- New Wiring throughout
Proprietary VS. Non-Proprietary

- Limited VS. Unlimited – Restricted VS. Unrestricted

- Diagnostic tool required VS. On board diagnostics

- Limited access to parts, schematics and technical assistance = limited choices and typically higher prices.

- If you buy proprietary, you better plan on a longer term relationship and hope that it stays positive.
  - You subject yourself to potentially higher costs, adverse policies, and change in personnel that may not be too pleasant.
Elevator Quiz

- Can the elevator landing doors open if the elevator is not there?
  - Only in the movies for dramatic effect.
Questions