Maintenance Control Program (MCP)

Maintenance Control Record Series

8.6.1.4 Maintenance Records

- **8.6.1.4.1 Maintenance records shall document** compliance with 8.6 of the Code and shall include records on the following activities:
- *(a) description of maintenance task performed and* dates
- *(b) description and dates of examinations, tests,* adjustments, repairs, and replacements
- *(c) description and dates of call backs (trouble calls)* or reports that are reported to elevator personnel by any means, including corrective action taken
- *(d) written record of the findings on the firefighter's* service operation required by 8.6.11.1

Segments to the MCP

ASME A17.1 section 8.6

- Section 8.6 outlines an MCP to contain several parts, these parts consist of:
- A detailed manual (for mechanics only)
- A generic description manual (intended to serve customer)
- A record of maintenance tasks with interval
- A record of examination with interval
- A record of safety tests with interval
- A record of callback and repair
- A record of fire service and initiation device with interval
- A record of oil use

The detailed manual

- Is not left on the job site
  - It should not be found by unauthorized personnel who may try to apply the contents.
  - It is the elevator companies property and proprietary to them except SIL requirements
- Contains necessary information to correctly fulfill each task assignment (task= maintenance, examination or test)
- Manual "must" when necessary be specific to the type and manufacture of the equipment.
  - Example: an Adams door restrictor will have different criteria than a GAL clutch restrictor.
- If necessary, ask to see it, but do not keep it.

Generic Manual

- Is left on the job site (machine room) to be viewed by you and owner
- Does not contain information specific too directions of how to perform any tasks.
- Contains generic description of all the maintenance, examination and safety test tasks.
- Do not expect to find anything of detail, it is intended to provide sufficient information to the owner regarding the relative nature of the task.
- Belongs to the service provider and may be removed when providers change.

MCP Record Series
8.6.1.4

- Several logs are required for compliance (see page 2)
- WAC will outline a retention cycle of 6 years, extended by 1 year beyond the recent 5 year test (where applicable)
- The logs belong to owner of the conveyance
- The logs are the owners responsibility to maintain
- The logs belong in the machine room or
- Other location within the building designated by the sticker on the controller
- Logs may not be located outside the building without written permission from the department

A17.1 maintenance tasks are found in:

- 8.6.4 = traction elevators
- Hydraulic elevators use appropriate section 8.6.4 & section 8.6.5
- 8.6.6 = Rack and pinion, screw column, hand
- 8.6.7 = Incline, LULA, private residence, side walk, rooftop, special purpose, elevators used for construction.
- 8.6.8 & 9 = escalators and moving walks
- 8.6.10 = Dumbwaiters

Intervals

- The maintenance procedures and intervals shall be based on
- *(a) equipment age, condition, and accumulated* wear
- *(b) design and inherent quality of the equipment*
- *(c) usage*
- *(d) environmental conditions*
- *(e) improved technology*
- *(f) the manufacturer's recommendations for any* SIL rated devices or circuits

8.6.4 maintenance should look like

Hand out one

Routine Maintenance Requirements. 8.6.1.4.1(a)	Place an **NA** next to the items not installed. **ND** next to item not due this year	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
CAR	(symbol) Indicates month task is due. (symbol) Indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications..												
8.6.4.9 Cleaning of Top of Cars.													
8.6.4.13 (b) car door electric contacts or car door interlocks, where required													
8.6.4.13 (c) door reopening devices													
8.6.4.13.2 Kinetic Energy and Closing Force													
8.6.4.15 Car Emergency System													
8.6.4.16 Stopping Accuracy													

8.6.4 and like this for cartop

CAR TOP														
8.6.4.1 Suspension and Compensating Wire Ropes														
8.6.4.2 Governor Wire Ropes														
8.6.4.3 Lubrication of Guide Rails	NA													
8.6.4.5 Safety Mechanisms														
8.6.4.7 Cleaning of Hoistways														
8.6.4.13 (a) hoistway door interlocks or mechanical locks and electric contacts														
8.6.4.13 (e) hoistway door unlocking devices and escutcheons														
8.6.4.13 (f) hangers, tracks, door rollers, up-thrusts, and door safety retainers, where required														
8.6.4.13 (j) interconnecting means														
8.6.4.13 (k) door closers, where required														
8.6.4.13 (l) door restrictors, where required														

8.6.4 and like this for MR and outside

MACHINE ROOM		(symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications.											
8.6.4.6 Brakes													
8.6.4.8 cleaning and condition of Machine/control Rooms													
8.6.4.12 Governors													
8.6.4.17 Ascending Overspeed and Unintended Movement	NA												
OUTSIDE HOISTWAY		(symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications.											
8.6.4.13 (d) vision panels and grilles, where required													
8.6.4.13 (g) astragals and resilient members, door space guards, and sight guards, where required													
8.6.4.13 (i) clutches, engaging vanes, retiring cams, and engaging rollers													
8.6.4.14 Hoistway Access Switches													

8.6.4 and like this for pit and other

PIT		(symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications.											
8.6.4.4 Oil Buffers	NA												
8.6.4.7 Cleaning of Pits													
8.6.4.10 Refastening or Resocketing of Drum Machines	NA												
8.6.4.11 Runby													
8.6.4.13 (h) sills and bottom guides, fastenings, condition, and engagement													
8.6.4.18 Compensation Sheaves and Switches	NA												
Other = Unique or manufacture specific maintenance requirements (add or remove lines as required) (symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications.													
Other: Seismic													
Other:													
Other													

"OTHER" maintenance tasks

- Where unique or product-specific procedures or methods are required to inspect or test equipment, such procedures or methods shall be included in the Maintenance Control Program.
- Can you give me some examples of unique procedures or methods?

Record of maintenance tasks

- We have just reviewed the specified A17.1 maintenance tasks for a traction elevator
- We didn't cover the signature requirement, besides that what questions do you have with respect to the ASME A17.1 – 8.6 maintenance tasks?

A record of examination with interval

- "Examination" per WAC is a portion of maintenance located in A17.1- 8.11
- The actual WAC cannot be effective until 1/1/2012 due to the Governors Directive
- Examination unlike 8.6 maintenance tasks must be done at least once a year, more often if the following conditions have merit:
- *(a) equipment age, condition, and accumulated* wear
- *(b) design and inherent quality of the equipment*
- *(c) usage*
- *(d) environmental conditions*

A record of examination with interval

- Just as with 8.6 maintenance tasks the examinations definitions must be located within the manuals.
- The next slides will be samples of the examination log should look like in the MCP.
- Hand out two

A record of examination with interval

Handout two

Annual examinations records 8.6.1.4.1(b) **8.11.2.1.1 (Car)**	Place an NA next to the items not installed.	8.6.1.2.1- (3) tests of equipment at scheduled intervals (8.6.1.7) in order to ensure that the installation conforms to the requirements of 8.6. (symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications.												
(a) Door Reopening Device														
(b) Stop Switches														
(c) Operating Control Devices														
(d) Car Floor and Landing Sill														
(e) Car Lighting														
(f) Car Emergency Signal														
(g) Car Door or Gate														
(h) Door Closing Force (30 psi max)														
(i) Power Closing of Doors or Gates	NA													
(j) Power Opening of Doors or Gates	NA													
(k) Car Vision Panels and Glass Car Doors	NA													
(l) Car Enclosure														
(m) Emergency Exit														
(n) Ventilation														
(o) Signs and Operating Device Symbols														
(p) Rated Load, Platform Area, and Data Plate														
(q) Standby or Emergency Power Operation	NA													
(r) Restricted Opening of Car or Hoistway Doors														
(s) Car Ride														
(t) Door Monitoring Systems	NA													
(u) Stopping Accuracy														
(v) Machinery Space/Control Space (2007)	NA													
(w) Working Areas in the Car (2007)	NA													
(1) means to prevent unexpected movement (2007)	NA													
(2) Unexpected Car Movement Device (2007)	NA													
(3) operating instructions for Unexpected Car Movement Device (2007)	NA													
(4) operating instructions for egress and reentry procedure (2007)	NA													
(x) Equipment Access Panel Electrical Device (2007)	NA													
Other:														

A record of examination with interval

- Note that A17.1 - 8.11 and the check sheet follow the same path.
- Lets review the remaining 8.11 items found on your MCP sample.
- Does anyone have questions of the examination 8.11 section of a MCP?

A record of safety tests with interval

Handout three

- These consist of the annual and five year test
- A17.1 defines them as:
- Category one and
- Category five
- Note, once these are in place within a MCP the State test log will become obsolete.
- **periodic tests, category:** a grouping of tests performed at common time intervals required by the authority having jurisdiction.

A record of safety tests with interval

- **periodic tests, category:** a grouping of tests performed at common time intervals required by the authority having jurisdiction.

A record of safety tests with interval

- Category one interval: due upon the 12 month anniversary of the previous category one or category five tests
- Category five interval: Due upon the 60 month anniversary of the previous category five test.

A record of safety tests with interval

Yearly, Category One testing Requirements 8.6.1.4.1(b)	Place an **NA** next to the items not installed.	(symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications. All test tasks shall be completed within a specified month.											
8.6.4.19.1 Oil Buffers													
8.6.4.19.3 Governors													
8.6.4.19.2 Safeties													
8.6.4.19.4 Slack-Rope Devices on Drum Machines	NA												
8.6.4.19.5 Normal & Final Terminal Devices													
8.6.4.19.6 Firefighters' Emergency Operation													
8.6.4.19.7 Standby or Emergency Power Operation	NA												
8.6.4.19.8 Power Operation of Door System	NA												
8.6.4.19.9 Broken Rope, Tape, or Chain Switch													
8.6.4.19.11 Ascending Overspeed and Unintended Movement (2007)	NA												
Other:													

5 year, category one test

5 Year, Category Five testing Requirements 8.6.1.4.1(b)	**NA** next to the items not installed. **ND** next to item not due this year	BELOW: (Year Test is due: 20**13** and or month test is due. (symbol) indicates month task is due. Initials indicate month specified task was completed and that all associated devices function according to code and manufactures specifications. All test tasks shall be completed within a specified month.											
8.6.4.20.1 Car and Counterweight Safeties	ND												
8.6.4.20.2 Governors	ND												
8.6.4.20.3 Oil Buffers	ND												
8.6.4.20.4 Braking System	ND												
8.6.4.20.5 Emergency and Standby Power Operation.	NA												
8.6.4.20.6 Emergency Terminal and Speed-Limiting Devices	NA												
8.6.4.20.7 Power Opening of Doors	NA												
8.6.4.20.8 Leveling Zone and Leveling Speed	ND												
8.6.4.20.9 Inner Landing Zone	ND												
8.6.4.20.10 Emergency Stopping Distance	ND												
8.6.4.20.11 Emergency Brake (2007)	NA												
Other: Form F621-051-000, 5 year safety test form filled out and left with MCP document	ND												
Other:													

A record of callback and repair

Handout four

Company Logo, name, address and licenses number

Callback/repair/replacement and adjustment record: 8.6.1.4.1(b) &(c) description and dates of adjustments, repairs, and replacements. (c) description and dates of call backs (trouble calls) or reports that are reported to elevator personnel by any means, including corrective action taken. 8.6.1.2.2 Where a defective part directly affecting the safety of the operation is identified, the equipment shall be taken out of service until the defective part has been adjusted, repaired, or replaced.

Building name:	Building address:	Conveyance ID: YR 20__ __
Check appropriate cell(s) below.		

Date: Mo/day	Trouble call	Repair	Replacement	Adjustment	Description: of call, repair or replacement	Resolution: action completed to place conveyance back in service or left shut down.	Initials

A record of callback and repair

- A few things to consider on this log:
- The sample combines the callback, repair into one format, some elevator companies may not, this is not an issue if they choose to separate the two.
- We do expect all mechanics to use the logs, the information is useful to mechanics, inspectors and owners.
- Can anyone tell me how this information can be useful?

A record of fire service, initiation device with interval

Handout 5

Firefighter's service operation 8.6.1.4.1(d)

Buildings Name:	**Building Address:**	**Building contact name and phone**				Conveyance ID: YR 20

Dear owner, the intervals are to be set quarterlyfor the keyswitch and annually for smoke and heat detectors. The months must be set by you or your designated management person. The tasks must be completed by a qualified person, trained in the proper operation ofthe devices and access to the elevator hoistway (if necessary). The building owner or designee shall ensure discrepancies are promptly repaired.8.6.1.2.2 Where a defective part directly affecting the safety of the operation is identified, the equipment shall be taken out of service until the defective part has been adjusted, repaired, or replaced.

Written record of the findings of the firefighter's service operation required by 8.6.11.1.	Place an **NA** next to the items not installed.	January	February	March	April	May	June	July	August	September	October	November	December
Phase I and II Keyswitch operation. Washington code requires these tests to be completed every three months		(symbol) indicates months task is due. Initials indicate months specified task was completed and device works properly.											
a) Phase I keyed to on, elevator arrived at lobby, door(s) remain open. Elevator responded accordingly													
b) In car phase II keyed to on, run elevator at least one floor. Elevator responded accordingly													
c) Return phase II keyswitch to off, then phase I to the off position. Elevator operates normally													
Smoke & heat detector tests . Washington code requires these tests to be completed once every twelve months		(symbol) indicates months task is due. Initials indicate months specified task was completed and device works properly.											
Main Lobby smoke detectors tested, elevator(s) returned to alternate floor, park ed with doors open.													
Test remaining lobby smoke detectors on remaining floors associated with recall, elevator returned to main lobby level, parked with doors open.													
Machine room smoke detector tested, elevator returned to designated landing, park ed with doors open													
Hoistway smoke detector tested, elevator returned to designated level, park ed with doors open (test may require assistance of elevator mechanic)													
Machine room heat detector tested, initiating shunt trip activation.													
Hoistway heat detector tested, initiating shunt trip activation..													
Heat detectors are 135 degree fixed													
Other = Unique testing requirements (add or remove lines as required) (sy mbol) indicates month task is due. Initials indicate month specified task was completed and device works properly.													

To the right: Print name, signature and initials of each person who completed tasks on these records. The initials are to match the completed tasks in associated cells. Falsification of documentation is subject to a $500.00 per day civil penalty (WAC 296.96)	Print Name	Signature	Initials
	Print Name	Signature	Initials
	Print Name	Signature	Initials
	Print Name	Signature	Initials

A record of fire service and initiation device with interval

- In the previous slide notice that there is a segment for owners key switch tests and another segment for the initiation device testing
- The intervals are mandated per WAC
- Quarterly for the key switch and
- Annually for the initiation device
- It is intended that the elevator company work in conjunction with the owner for the month the test should be performed in, Why?
- These tests contribute to proper operation of the emergency fire service, where possible coordination between mechanic and others provide a better approach to correcting any discrepancies and if assistance is necessary for the cartop access.

A record of fire service and initiation device with interval

- In the fire service log notice that the tasks are more specific to the expected outcome.

Phase I and II Keyswitch operation. Washington code requires these tests to be completed every three months
a) Phase I keyed to on, elevator arrived at lobby, door(s) remain open. Elevator responded accordingly
b) In car phase II keyed to on, run elevator at least one floor. Elevator responded accordingly
c) Return phase II keyswitch to off, then phase I to the off position. Elevator operates normally

A record of fire service and initiation device with interval

- In the fire service log notice that the tasks are more specific to the expected outcome.

Smoke & heat detector tests . Washington code requires these tests to be completed once every twelve months
Main Lobby smoke detectors tested, elevator(s) returned to alternate floor, park ed with doors open.
Test remaining lobby smoke detectors on remaining floors associated w ith recall, elevator returned to main lobby level, parked with doors open.
Machine room smoke detector tested, elevator returned to designated landing, park ed with doors open
Hoistway smoke detector tested, elevator returned to designated level, park ed with doors open (test may require assistance of elevator mechanic)
Machine room heat detector tested, initiating shunt trip activation.
Hoistway heat detector tested, initiating shunt trip activation..
Heat detectors are 135 degree fixed

A record of oil use

Handout 6

An oil use log is a strategic tool to be utilized by mechanic, owner and inspector. Can anyone give me examples of why this log is important?

Hydraulic oil use record: 8.6.5.7 Record of Oil Usage. If part of cylinder and/or piping is not exposed for visible examination, a written record shall be kept of the quantity of hydraulic fluid added to the system and emptied from leakage collection containers and pans. The written record shall be kept in the machine room. When the quantity of hydraulic fluid loss cannot be accounted for, the test specified in 8.6.5.14.1 and 8.6.5.14.2 shall be made. 8.6.1.2.2 Where a defective part directly affecting the safety of the operation is identified, the equipment shall be taken out of service until the defective part has been adjusted, repaired, or replaced.

A record of oil use

- Notice the log requires an explanation of why any oil would be added into the tank, even if from the pit containment bucket.
- If you would see undetermined oil loss, should you expect to see a coinciding test or repair within one of the other logs?

Check appropriate cell				
Date: Mo/day	Leaked into containers	Undetermined oil loss	Other system leaks	New oil added

Signatures

Handout 7

- Per our example the department requires a signature sample section with the MCP. It may be located throughout the document or they may have a single page devoted to this requirement.
- However documented, it shall contain the printed name, signature and initials of the person authorized to perform the tasks.

Signatures

- Note that a cell is the proper location for the mechanics initial.
- The mechanics initial shall be placed within the cell corresponding to the month the task was completed.
- keep in mind you may not see it in the month the task was due, because if not completed in the month due, but done at a later date, at that spot is when completion is captured.

Types of maintenance contracts

- We do not regulate maintenance contracts of any type. As a matter of fact owners do not need to have a maintenance contract at all.
- Inspectors, do not presume to know or acknowledge the level of service an owner is receiving based upon a maintenance contract
- Your corrections will be the correspondence between owner and elevator company. They determine if they are getting what they paid for not us.

Types of maintenance contracts

- Our job, “report on the condition of the conveyance at the time of inspection”.
- The MCP itself will contain the information necessary to perform the level of maintenance necessary to keep the equipment in compliance based upon, What? Can anyone answer the question..

Types of maintenance contracts

- The maintenance procedures and intervals shall be based on
- *(a) equipment age, condition, and accumulated* wear
- *(b) design and inherent quality of the equipment*
- *(c) usage*
- *(d) environmental conditions*
- *(e) improved technology*
- *(f) the manufacturer's recommendations for any* SIL rated devices or circuits

Types of maintenance contracts

- One more item that the inspector has to take into consideration regarding the MCP is?

Types of maintenance contracts

- What if the interval is insufficient
- Methods of determining a insufficient task!
  - The type of correction
  - Callbacks or repair
  - Care should be taken when expressing a correction because of insufficient interval except for:
  - Examinations and tests are a minimum of once per year or periodic.

The MCP

- Question
- Who is to have an MCP
  - All owners who have an active piece of ASME A17.1 conveyance
- Do you understand what each MCP looks like for each type of A17.1 equipment?
- Who fills the MCP out?
  - Licensed mechanic or authorized person