PURPOSE

This document details the expectations for Sight and Sound operations for theatre managers, as well as regular cleaning and maintenance duties for theatre associates and the scope of work for the annual PMs completed by Technical Systems Engineers (or a scheduled 3rd party associate).

CONTENTS

SIGHT & SOUND EXPECTATIONS

Managers are responsible for several key elements of the Sight and Sound experience including:

- Respond to S&S requests for information and complete suggested troubleshooting.
- Report concerns via DSSP; update tickets with troubleshooting completed and upon receiving a part.[i]
- Call the TOC for *emergencies only*.
- Maintain functional assistive moviegoing /DAS equipment and ensure all associates are trained on equipment.[ii]
- Complete regular presentation checks of onscreen content: audio, video, and environment.
- Maintain the appropriate number and type of supplies (i.e., lamps, coolant, filters, cleaning items, etc.).[iii]
- Clean the port glass weekly or as needed.[iv]
- Clean the lenses as needed with the appropriate supplies.[iii]
- Move the 3D filters out of the light path during 2D presentations (and back in place for 3D playback).[v]
- Keep the projection booth clean and organized: take out the trash, ensure appropriate lighting, sweep and mop as needed, dust the tops of projectors – particularly any vents - quarterly.
- Ingest and delete content weekly (or more often if necessary).[vi]
- Xenon projectors only: Change lamps within target operating hours.[vii]
- Xenon projectors only: Change filters per the expected schedule. Add coolant as needed.[viii]
- Laser projectors only: Clean filters annually (or more often as needed).[ix]
- Return defective/unused parts[x] as required; display the *Parts Return Location* sign[xi].
- Return used Xenon lamps for recycling and file for reimbursement if failure is under warranty.[xii]
- Request emergency screen cleaning when necessary. S&S will email annually to schedule screen and masking cleaning.[xiii]
- Keep walkways clear and do not lean anything on projectors, sound racks, or electrical panels.
- Run *Dolby 5.1 channel ID* (non-encrypted) content for audio troubleshooting when needed.
- Run *AMC_FLAT_SCOPE_VISTA PATTERN* content for aspect ratio troubleshooting.
- Run *SMPTE_TST-1-Bv21* (encrypted) for AMG troubleshooting. For keys, email: ddchelp@bydeluxe.com.

PROJECTOR PLAYBACK TESTING

Use the steps below to verify successful playback on each projector. Perform all verification tasks below within the auditorium not from the projection booth.

SCHEDULING

1. Log in to Screenwriter.
2. Verify availability of the SPL *Playback Test*.
    a. If the SPL is unavailable, open a DSSP ticket.
3. Verify availability of the content pieces listed below.
4. Schedule the SPL *Playback Test* in the affected auditorium.

EVALUATION PROCEDURE

1. Framing Chart - File name: 01_AMC_FLAT_SCOPE_VISTA_PATTERN_2
    a. Flat and Scope – verify image size and clarity
        i. Flat (3996x2160) – Red 1.85 Max Crop should be visible in the lower left and upper right corners.
        ii. Scope (4096x1714) – Green 2.39 Max Crop should be visible in upper left and lower right corners.
        iii. Focus – Ensure the entire image is focused. Corners may be slightly out of focus in some instances especially if the XL box is in the image path.
    b. Check for overshoot/undershoot of the image onto the masking
2. SMPTE Test - File name: SMPTE_TST-1-Bv21_51-71_20170110_SMPTE_Folders
    a. Audio – Left Screen Channel/Right/Center/LFE (Subs)/Left Surround/Right Surround
        i. Verify audio playback is coming from corresponding speakers in the auditorium.
        ii. Note any missing channels.
        iii. Ensure audio clarity (Muffled/Crackling).
    b. AMG - HI/VI/CC & Subtitles
        i. HI – Verify HI is present (Ch1a/Ch1b)
        ii. VI – Verify VI is present (CH2a/Ch2b)
        iii. CC – Verify captions appear correctly on the Captiview or DAS Receiver.

The scope of work for TSEs to complete annual preventative maintenance duties are listed below by projector type. These tasks are **not** the responsibility of the theatre team.

The following duties are to be performed annually by a certified technician. All listed systems should be cleaned, inspected, and/or adjusted as necessary and components replaced as needed/required according to AMC maintenance guidelines and Manufacturer Lifecycle intervals.

PREVENTATIVE MAINTENANCE – ALL SYSTEMS

AUDIO

- Channel ID; all channels present and functioning properly
- Sound pressure; must meet AMC established levels per channel; configure backup file
- B-chain (check, align as needed); All frequencies verified to be within acceptable range of SMPTE x-curve measurement. A single mic RTA is only acceptable for room verification. Adjustments MUST be made using a four- channel RTA (such as Acoustx D2 Acoustical Measuring System) averaging at no less than 20 second intervals.

AUDITORIUM INSPECTIONS

- Visual inspect speakers of physical drivers for wear/damage
- Port Window polarization testing in 3D auditoriums using RealD DCP; transmission testing as needed
- Screen and masking inspection
  - ✓ Condition/Cleanliness/Damage, Issues (sizing, installation, manufacturing)
  - ✓ Screen gain testing if required, Masking rigging operation/functionality

AMG

- Confirm proper system operation of CaptiView and Fidelio or Dolby Accessibility Solution

PREVENTATIVE MAINTENANCE – SONY SYSTEMS

PROJECTOR

To be completed by a certified technician.

- PRD cleaning; Pre-PBS inspection
- LRD removal & cleaning, illumination area adjust
- Luminance check & adjust as necessary (bright1, uniform, no yellowing or YDOT)
- Alignment (check; adjust as needed)
  - ✓ Image size (using {01_AMC_FT_SCP_TST} reverse vista pattern)/position/cropping
  - ✓ Uniformity (PCAT); Gamma, Virtual White Balance (CSC)
  - ✓ Color (CSC), Image ratio, H/V position, and zoom
  - ✓ 3D Convergence, Focus, Registration
- Reflector and fan inspection/replacement, measure exhaust (CFM), function setup verification
- Consumables:
  - ✓ Filter inspection/replacement
  - ✓ Lamp change - required if lamp has exceeded acceptable operating hours or cannot achieve required light output after required optical component cleaning/alignment

SERVER

- Content management: Report if file cleanup is needed to maintain sufficient available capacity.
- Verify proper automation Functionality and SPL Execution.

- Vacuum intake on front of PS unit and (four) fans on rear. Check for oil buildup; replace fans as needed.

To be completed by a certified technician.

PREVENTATIVE MAINTENANCE – BARCO LASER SYSTEMS

PROJECTOR

- Wipe down the outside of the projector and pedestal.
- Vacuum / blow out dust on electronic boards, fans, connections.
- Remove lens: clean output of LE/Input and output of the lens if dust is clearly visible. Upon re-install of lens, run a manual “Lens Home & Return” action to calibrate.
- Inspect and clean filters.
- Verify lens holder shift functionality. Only adjust if needed.
- Clean port glass following our standard operating procedures. If port glass is found to be dirty, please follow up with management to address the issue.
- Check DPXX-BLP series cooling unit for any excessive vibration.
- Run Full Screen White and Full Screen Black Test Patterns: Check Light Pipe for shadows and prism for artifacts.
- Alignment (Check; adjust as needed)
    - Lens Position - H/V position, Zoom and Focus (using {01_AMC_FT_SCP_TST}
    - Screen File – Adjust cropping as needed; verify flat/scope for 2D/3D alignment
    - Illumination – Check light output, CLO, Power
    - Color Verification
    - Convergence (Using internal Convergence_pattern_XXX test patterns)
    - 3D Convergence if equipped with RealD XL
- Record light levels and laser power for both 2D and 3D.
- Record laser operational hours.
- Verify Projector Touch Display works as intended.
- Confirm the date and time on the projector are accurate.
- Verify current approved software version on projector and ICMP. If a lower software version is found, please reach out to local TSE to check to see if there is any known issue with upgrading the software.
- Verify storage space on the ICMP is sufficient.
- Verify Flat/Scope 2D/3D macros for any incorrect cues or settings.
- Check and back up projector/ICMP setting files and save to LMS.

PREVENTATIVE MAINTENANCE – DLP SYSTEMS

To be completed by a certified technician.

PROJECTOR - DLP

- **Alignment**
  - Verify Projector Alignment/Down Angle (image center of lens)
  - DMD Convergence; physical DMD chip movement for series 1, series 2 physical and/or electronic
  - Screen File – Verify correct values
    - ✓ Image size (using safe image or {01_AMC_FT_SCP_TST} reverse vista pattern)/position/cropping - within tolerance
    - ✓ ILS - Enabled, check motors for loose mounting
    - ✓ Lens Zoom (series 1) – verify lens stop markings (if presentation values not used)
    - ✓ Channel Setup Detail correct
  - Lens – review size for optimum image/DMD utilization (resolution & light output)
  - Lamp Per Channel – Verify correct setup for all functions
    - ✓ Light Output Check/Proper Lamp Selected
  - Lamp Expire Time Notification – verify correct
  - Color Space verification/correction
  - Integrator rod – check and align as needed
  - 4K Upgrade – check and align fold mirror as needed (image shadow)
- **Polarizer**
  - Z-Screen – inspect for wear, ensure mount is tight and level, check for proper cable tension
  - RealD XL Alignment and convergence verification
  - RealD Polarity verification
- **Consumables**
  - Main Filter Replace
  - Series 2 Radiator Filter Replace
  - LAD Filter – inspect, replace at required maintenance interval
- **Component Life Cycle (inspect/replace at required maintenance interval)**
  - LVP, LVPS Fans (ZX), Ballast fans, Engine Exhaust fans, Card Cage fan
  - PCM Batteries, ICP Battery (ser 2)

TPC

- Replace batteries at required intervals
- Ensure input channels are properly defined with no duplicate channel names (series 1)

SERVER

- Content management; Report if file cleanup is needed to maintain sufficient available capacity
- Proper automation Functionality and SPL Execution
- Vacuum RAID drive bays and fan areas. Use soft bristle brush to clean chassis vents; Ensure fans are rotating and moving air

To be completed by a certified technician.

LAMPHOUSE

- Lamp reflector – Inspect/Clean
- Lamp LOC Components (XYZ adjuster) / Brightness Calibration
- Lamp Anode Connector – Inspect/replace at required maintenance interval
- Measure exhaust (CFM)
- Lamp Blower – inspect/clean/replace as necessary
- Lamp change - required if lamp has exceeded acceptable operating hours or cannot achieve required light output after required optical component cleaning
- Ballast – inspect AC feed terminal for discoloration
- Ballast – inspect DC output terminal for discoloration

WATER COOLING

- Heat exchanger fan – inspect and clean as needed
- Heat exchanger – clean
- Coolant tank and lines– Flush
- Coolant pump – replace at required maintenance interval

[i] SS-4-20 -- Digital Systems Support Portal
[ii] SS-1-05 -- Assistive Moviegoing
[iii] SS-4-05 -- Approved Cleaning Supplies
[iv] SS-4-40 -- Port Class Cleaning
[v] SS-6-20 -- 3D Filter Operation
[vi] SS-3-06 -- Digital Content Management - Quick Reference Guide - Screenwriter
[vii] SS-6-05 -- Xenon Bulb Procedures
[viii] SS-6-30 -- Projector Filter User Guide
[ix] SS-6-30 -- Projector Filter User Guide
[x] SS-4-35 -- Sight & Sound Hardware Returns
[xi] SS-4-35a -- Job Aid - Parts Return Location
[xii] SS-6-05 -- Xenon Bulb Procedures
[xiii] SS-4-25 -- Auditorium Screen Maintenance