



## Guidelines for Training MA LVL 1



## Objectives:

1. Standardize training methods and materials
2. Introduce Trainer Qualification Standards
3. Standardize Examination and Certification

# Course Timing – Day One

## Day One

9:00 – 9:30	Introductions – Class & Facilities
9:30 – 10:30	Motion Amplification® Overview
10:30 – 10:45	Break
10:45 – 11:30	Camera, Lighting, and Lenses
11:30 – 11:45	Break
11:45 – 12:00	Introduction to Motion Explorer
12:00 – 13:00	Lunch
13:00 – 14:30	RDI Acquisition
14:30 – 14:45	Break
14:45 – 15:30	RDI Acquisition
15:30 – 16:30	RDI Motion Amplification®

# Course Timing – Day Two

## Day Two

9:00 – 10:30	RDI Motion Amplification®
10:30 – 10:45	Break
10:45 - 12:00	RDI Motion Amplification®
12:00 – 13:00	Lunch
13:00 – 14:15	Introduction to Motion Studio
14:15 – 14:30	Break
14:30 – 15:30	Maintaining the Motion Explorer Hierarchy
15:30 – 16:30	Video Case Histories

# Course Timing – Day Three

## Day Three

9:00 – 10:30	Field Data Acquisition
10:30 – 12:00	Work on Class Project
12:00 – 13:00	Lunch
13:00 – 14:00	Work on Class Projects
14:00 – 15:00	View Student Videos and Review
15:00 – 16:30	Level I Motion Amplification Certification Exam
16:30	Student Dismissal

# Section 1 – Emphasize:

- **Safety** – Since the measurements are totally non-contact, there is much less risk of injury or even death, as compared to conventional route-based vibration analysis, since the person acquiring the data never has to touch the machine.
- **Not a Replacement for Vibration Analyzer**– Although we can get a waveform, spectrum, orbit, etc... This is a compliment to, not a replacement for a traditional vibration analyzer.
- **Complements RCA Activities** – Root Cause is often visually apparent.
- **Diverse Applications** – Motion Amplification can be used on a wide variety of equipment including rotating machines, structures, process lines, piping, etc.
- **Quick and Easy** – There is very little set up involved, and the capture process takes only a few seconds, which means it can be used very often as a trouble shooting tool.
- **Actionable Information** – The results of Motion Amplification are easy to see in standard video format, which enhances communications with facility personnel.
- **Less Training** – Compared to vibration analysis, which often takes years to learn, Motion Amplification technology takes only a few days to become proficient.

# Section 1 – Emphasize:

- Differences between MA and ODS
- Comparison of Looseness Spectrum to Looseness MA Video
- Differences between Acceleration and Displacement

## Section 2 – Emphasize:

- **Focal Length** – why we use lenses with fixed Focal Length
- **Relationship between Aperture Setting and Depth of Field**
- **Tripod** – Actually demonstrate the tripod and emphasize Camera Stability
- **Light** – Make sure to demonstrate light use... and charge battery for the field exercise



# Section 3 – Emphasize:

- Walk through exercise 1
- Exercise 2 – Mainly about focusing the lens and storing a recording... Don't get into great detail about the acquisition settings here. Explain that the settings will be covered in detail in the next section.
- Make sure to let them know that deleted recordings DO NOT go the computer recycle bin.

# Section 4 – Emphasize:

- **Framerate and its relationship to Fmax, Indoor Lighting Flicker, Brightness, Vibration Waveform Sample Rate**
- **Minimum Framerate – 2.5X Highest Frequency of Interest**
- **Minimum Displacement Resolution**
- **Cropping for increased framerate – both manually and by using the reset button under Image Properties**
- **Adjusting Dynamic Range to increase framerate**
- **Iris MX Binning – Only if customer has or is interested in an Iris MX**
- **Saturation – Demonstrate the new Saturation Tool**

# Examination Procedure

## Materials to be handed out to each student:

- Provide link to exam

**Time limit is 90 minutes**

- Students may use manual, notes, phone (for calculator if needed)

# Examination Procedure

## After completion of exam

- Student receives result immediately, including the correct response for any missed questions
- Email of the result is sent to me. I will forward result to instructor.
  
- Passing score is 70% (15 missed)
- If needed, student can retake exam after 24 hours
  
- Please have students fill out the evaluation – this is a separate link

# Certificates

- Created in Knoxville Office Only
- To be printed locally using PDF provided by Knoxville office

## Information Needed:

- Student Name (Please pay attention to Spelling)
- Course Dates
- Instructor Name

