



Note: This product no longer meets any world safety or hygiene standards.

INSTRUCTION MANUAL



SOUND HAZARD
INTEGRATOR
MODEL M 6

MODEL M-6
SOUND HAZARD INTEGRATOR
Automatic Measurement of WALSH-HEALEY - OSHA Noise Exposure

DESCRIPTION

The Federal Walsh-Healey Public Contracts Act and the Occupational Safety and Health Act, OSHA, specify the maximum noise levels to which personnel may be exposed in a work environment. These maximum noise levels, expressed in dBA, for various periods of time are shown in the following table.

Duration of Exposure (Hrs./Day)	Equivalent Maximum Noise Level (dBA)
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

The Quest M-6 Sound Hazard Integrator automatically and

accurately measures cumulative exposure to noise in complete accord with the above cited government regulations. The unit can be used in virtually all environments: industry, construction, mining, transportation, traffic control — anywhere there is noise. It is powered by a rechargeable nickel cadmium battery.

The Integrator measures noise exposure automatically between two thresholds: 90 and 115 dBA. Noise levels above 90 dBA are time integrated proportionate to level in accordance with the above exposure tables with "A" scale weighted frequency response. These integrated measurements are shown in the 4-digit readout counter as a percentage of the maximum allowable exposure. Noise levels above 115 dBA activate an internal electronic latch. Exposure to these noise levels is indicated by the glowing red 115 dBA light when the button next to the light is depressed. Operation of the Integrator is illustrated in the accompanying block diagram.

When in use the Integrator is worn on a belt or carried on a shoulder strap. No training other than the instructions in this manual are required to operate the unit.

MICROPHONE:

High quality SPL ceramic microphone.

OPERATING TEMPERATURE:

-10° to +50° C.

BATTERY:

Rechargeable Nickel-Cadmium battery, 18 volt with ground tap forming +10.8 and -7.2 volts.

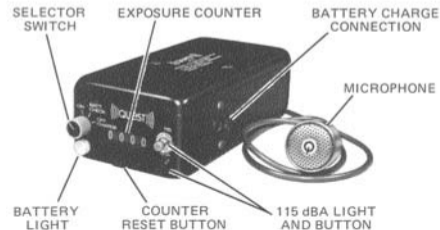
SIZE AND WEIGHT:

Case 2 x 3 x 6 inches

1 lb 9 oz including batteries

CONSTRUCTION:

Solid state integrated and transistorized circuit construction in rugged aluminum case.



OPERATION

CONTROLS AND DISPLAYS

SELECTOR SWITCH - with this switch in the ON position the battery is connected to the internal circuitry and the Integrator is measuring and recording noise. In the BATT. CHECK position the white light below the switch glows to indicate sufficient battery capacity for accurate measurement. In the OFF CHARGE position the battery is disconnected from the noise measuring circuitry and is connected to the charge connector on the side of the case for charging as required.

PERCENT EXPOSURE COUNTER - This counter indicates the percentage of permissible daily noise exposure received. The counter is a four-digit display that indicates from 0 to 9999 in increments of .1% (000.1% to 999.9%). A reading of 1000 (100.0%) indicates that maximum permissible exposure for one day has been reached.

COUNTER RESET BUTTON -- When depressed, this button cancels the noise exposure reading and returns the counter to zero.

BATTERY LIGHT - This light glows white when the selector switch is in BATT. CHECK position to indicate the battery has sufficient charge for accurate

the noise in an area is to be monitored, place the M-6 in the desired location and suspend the microphone away from solid surfaces.

3. Turn the selector switch to ON. The M-6 now is measuring and integrating noise levels at 90 dBA and higher.

4. Depress the 115 dBA button and check that red lamp does not light. If red lamp does light, turn selector switch to OFF, wait 2 or 3 seconds, and place selector switch to ON. Again depress the 115 dBA button to check that red lamp does not light.

5. Take the exposure measurement for any reasonable length of time up to 8 hours. If noise levels vary considerably, monitor the noise for the full work day. If measurement is taken, say, for four hours of an 8-hour work day, the counter should read less than 0500 (which is 50% of the allowable exposure) to be within the specified limits. Regardless of the length of the work day, the M-6 indicates the percentage of allowable noise which has been received up to that time.

6. At the end of an exposure period, depress the 115 dBA button to see if a noise above 115 dBA has been received. If the red lamp lights, the maximum permissible noise limit had been exceeded at some time during the measurement. **BE SURE TO CHECK**

THE 115 dBA EXPOSURE BEFORE TURNING THE SELECTOR SWITCH TO OFF.

7. Set selector switch to OFF. This deactivates the 115 dBA electronic latch.

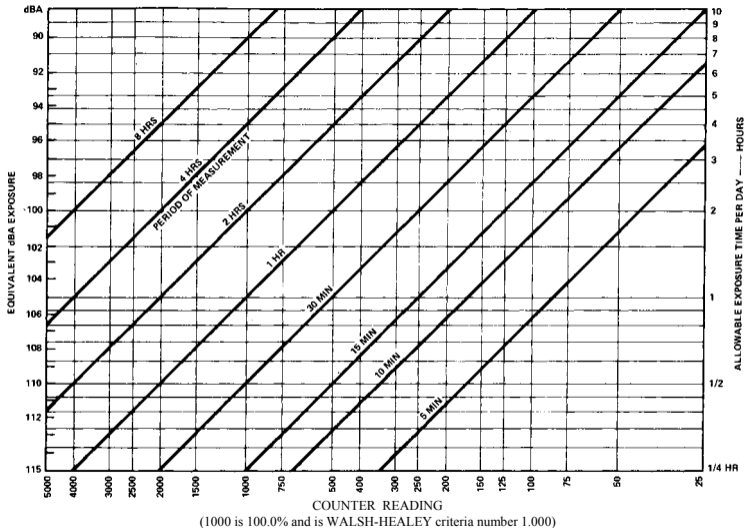
8. Read and note the exposure reading on the counter.

9. Depress counter reset button to return counter to zero.

BATTERY CHARGING

When fully charged, battery capacity is such that the M-6 will operate well in excess of a full 8-hour day. After such use the unit should be put on charge overnight for 16 hours or at least as long as the M-6 was used. Charge current should not exceed an average of 25 milliamps DC into the 18 volt battery for overnight charging. Charge current of this magnitude will not harm the battery even if kept on after battery is fully charged. The Quest Model C-1825 Battery Charger is specifically designed for charging the M-6 nickel cadmium battery. Merely plug the two pin connector into the M-6 and plug the charger into a 115 VAC outlet.

BATTERY CAN BE CHARGED ONLY IF THE SELECTOR SWITCH IS IN OFF CHARGE POSITION.



Noise Exposure Measurement M-6 Sound Hazard Integrator For Less Than 8 Hour Measurement Periods

To check the M-6 with a CA-10 Calibrator or similar device, place the microphone in the Calibrator coupler and set the Calibrator knob at 115 dB. From the tolerance table note that in a 10 minute period the counter should read between 0594 and 0747 if the M-6 is properly calibrated, with a mean count of 0667. Since the count rate is maximum at 115 dB, a one-minute test would be adequate. For this exposure the counter should read between 59 and 75.

