

OPERATOR'S MANUAL



OREMASTER SUPER GEIGER COUNTER

Model L3TSMZ-56

Operating Instructions for General Prospecting

1. Turn the Range Control to speaker.
2. Turn the High-Low switch to LOW.
3. Turn the Meter Speed Control to #4
4. Turn the zero control to the ON position
5. Turn the OFF-ON power switch to the ON position.

Listen for the response or count in the speaker. It may be TOO fast, which may be the case till the automatic regulator tube cuts in. At times it takes a few seconds for the tube to start operating. As soon as the automatic regulator tube starts operating, the count will drop to normal, which is approximately 40 to 50 clicks per minute. As soon as it does, turn the HIGH-LOW switch to HIGH and turn the Range Selector to the Prospect - hi position.

In rare cases the regulator tube may NOT cut in as readily as it should and if this happens, turn the off-on switch to OFF for ten seconds or so; then back on. Do this a few times if necessary, and this should start the automatic tube to operating. Whenever the regulator tube does not cut in, the count is TOO rapid to count and is a steady buzz.

If the Range Control is not first turned to the speaker position, and instead is turned to the meter setting and the voltage regulator has not yet cut in, it will over load the meter and may damage or shorten its life as well as to also shorten the life of the geiger tubes.

Always turn the speaker ON first before switching to the meter ranges.

After you turn the range control to PROSPECT - hi position, NOTE YOUR METER READING: This is your normal reading without the background. Any STEADY reading above this when prospecting is an indication that you are detecting additional radiation. Whenever the slightest radiation is picked up, the meter needle rises (moves toward the right) and stays (holds) there. This will be a positive indication of radioactive matter being present.

The slow weaving of the meter needle is to be ignored, for this is an indication of the supersensitivity of this remarkable instrument at work, intercepting radiation from outer-space and the natural radiation of the area of the earth.

NOTE: YOU ARE READY TO PROSPECT

Remember. OREMASTERS are SUPERSENSITIVE - so sensitive that

they can detect deep radioactive deposits for you. If the deposit is deep, the reading will most likely be low unless there are cracks or crevices in the rocks to make an easy path for the radiation to follow to find its way to the surface. If the formation you are prospecting is rocky, check all cracks and crevices in the outcropping. In the event that there is radiation below, the reading above or against these openings in the formation will increase to * or full scale deflection on the meter and remain there on your PROSPECT setting. If a deposit is below, every foot of overburden that is removed will give you a higher reading, as each foot that is removed lessens the path of resistance for the rays to reach the surface, which results in more radiation and a higher reading. In case the deposit is quite deep, the meter needle may fall back momentarily, but it should return to the higher reading position at once and should never fall back to the point of the regular reading or count at which you started.

When your meter needle goes full-scale - and stays there (to the right side of the scale) turn the Range Control from the HI prospect to the Lo position. Now try to find the exact spot where you get the highest reading on the Low position.

If you cannot tell from which direction the radiation is coming proceed as follows:

1. Hold the OREMASTER level with your waist - with the meter end pointed away from you and the battery end (called the back) flat against your stomach.
2. Make a complete turn (pivot) very very slowly watching the meter reading very closely. Your highest reading will occur when you are pointing the front of the OREMASTER in the direction of the deposit. To test the accuracy of this reading move the Meter Speed Control to the #3 position and repeat the procedure (pivot) If these two readings do not check, repeat, using the #2 position and if necessary the #1 position (repeating same) In case the deposit is quite weak or deep, it will register more noticeably on the faster settings (#1 being the fastest)

Now that you have located the direction in which you get the highest reading, move the meter Speed Control back to the #4 position, and walk in that direction. As you come closer to the deposit or source of radiation, you will notice that the meter reading becomes higher, and the needle may go off scale to the right. Now turn your hi-low switch to HI and your Range Control to Lo. Continue in the same direction until you receive a full scale reading again, then turn hi-low switch to Lo. When this happens, turn the Range Control to the .2 position. By this time you are very close to the deposit or source of radiation. If there

is much overburden, you may be right over it, but as long as you can still follow toward the direction from which you secure your high reading and still get a higher reading yet, you are still not over the vein or heart of the deposit. In the event that the meter needle again swings off scale (to the right) switch the Range Control to #2. (The radiation must be quite high to take the needle off scale to the right on the #2 position, but if it does, switch to the #20 position) Continue in the direction from which you received your highest reading until you secure the highest possible reading.

You receive your very highest reading when you are over the center of the vein. Mark this place with rocks or other material at hand. As you move away from the deposit, you will notice the meter needle drop to the left, and the reading become lower. You can follow the direction (surface pattern) of a radioactive vein or deposit by going in the direction of the highest reading and marking with small monuments of rock those places where you obtain the highest readings. Put your markers to each side and in the center of those places. This will give you some idea of the size of the vein or deposit and the direction in which it runs.

LOCATING ORE SAMPLES IN THE VEIN:

To locate the richest ore samples in the vein, locate the spot of highest radiation, and dig in at this point until you find the ore that is giving the highest reading. Be sure the high-low switch is on the LOW position. Turn the Range Control to the #20 position. If the meter does not respond, turn to the #2 position; and if it still does not respond, turn to the .2 position. The instrument responds to the weaker ores on the .2 setting, the medium ores on the 2 setting and the strongest ones on the 20 setting of the Range Control. Remember that the HIGHEST reading does NOT ALWAYS indicate the most valuable deposit. Some deposits - such as pitchblend - can be worth a fortune even though they have a weaker radiation and yield a lower grade ore than other deposits of a different type of mineral having an extremely high radiation. This is one very important reason that ORE MASTERS are built to be so supersensitive - in order to detect these weakly radioactive RICH deposits not detectable with less sensitive instruments. Always check carefully ANY area that shows a STEADY above-normal background reading or count. Do not be fooled by looking only for high readings and neglecting the low above-normal readings. Some valuable ores have weak radiation - not high radiation.

USING THE SPEAKER on high, three geiger tubes are used on the speaker and on low, one tube.

Change the Range Control to the SPEAKER position. Be sure the HIGH-LOW switch is on HIGH. Do not bother about the Meter Speed Control since the meter is not used when the speaker is on. (The meter needle will start to fall to the left as soon as the

speaker is switched on) When the count becomes too rapid on the HIGH position, snap the high-low switch to the LOW position. This will decrease the rate of the count, which will now be only one-third as fast as previously. When the OREMASTER speaker is used, the counter itself continues to be directional.

Always note the meter reading immediately before turning on the speaker so that you can compare that reading with the one obtained when you switch back from speaker to meter. Any increase or decrease in the latter reading when compared with the former indicates increased or decreased radiation in the area.

The speaker should be used whenever the surroundings are such that it is unsafe to watch the meter. This is particularly true in rough terrain or "snake country". Rattle snakes have a habit of laying asleep in trails and on rocks where you may either step or lay your hand while prospecting, and while they are not usually aggressive, to step on him is to make him fighting mad. They also lay in the shade of the trees, rocks and bushes and blend in so closely with the surrounding colors that it is very difficult to see them, and the prospector should have his eyes free for his own safety while prospecting in these areas. Some of the best uranium country has lots of snakes, as well as being very rugged, where you definitely need the speaker. You may be easily saved from a bad fall, a twisted ankle, or a snake bite for with the OREMASTER'S powerful, supersensitive speaker you need not watch the meter at all. Any increase in radiation will be heard INSTANTLY on the speaker and alert you to the presence of radioactive matter. Your eyes are free to look for promising formations, outcroppings, etc that may carry other non-radioactive minerals while your OREMASTER searches for radioactive minerals. On hunting and fishing trips you can concentrate on these sporting activities, and the speaker will tell you instantly if you come near a radio-active deposit. There is no need to concentrate on the instrument - just turn it on and forget it.

When the speaker is on, the OREMASTER is about five times as sensitive as a standard counter. When the meter is on, it is over 100 times as sensitive even when using only one geiger tube.

AERIAL AND MOBILE PROSPECTING

For aerial prospecting you may have to shield the instrument from the radiation from the plane's instrument panel. We have lead shields that fit OREMASTERS for this purpose. Also when used in a plane you may have to recalibrate the instrument when you are in the air and approximately 100' or so from the ground, as you are getting away from the earth's natural radiation. To do this, follow the calibration instructions. No radioactive sample is needed to do this. You can recalibrate the instrument again after you return to the ground, for ground use, as it takes less than a minute. Customers report much better results from the air with OREMASTERS than with the regular airborne equipment costing thousands of dollars.

In general the aerial prospector should fly as low and as slow as possible - within safe limits for best results in locating ore veins. Speed makes no difference in locating blanket or sedimentary deposits. The following instructions apply to both mobile and aerial prospecting.

1. Turn the range control to PROSPECT - HI.
2. Turn the Meter Speed Control to #1 - fast, or to #2 (MEDIUM) for very fast driving. To #3 (SLOW) for standard driving, and to #4 (EX. SLOW) for slow driving - this will give you a STEADIER METER MOVEMENT.
3. Turn the high-low switch to HIGH.
4. Turn the zero control to the ON position.
5. Turn the off-on switch to ON.
6. NOTE YOUR BACKGROUND METER READING (Do this after you are in your plane or car)

Remember that you do not need to open your car windows since the ORFASTER is so sensitive that it can detect through the glass and metal of your car. (You can, if you wish, switch to the SPEAKER and follow the directions for speaker use if you are traveling alone and cannot watch the meter) Big 4 1/2" external dash meters are available for plane or car, equipped to plug right into the instrument - \$59.50 - PREPAID

Any area you enter where the meter reading increases and holds steady above the normal background should be carefully investigated.

DELAYED-ACTION METER SETTING

1. Turn the Range Control to PROSPECT HI
2. Turn the Meter speed control to #4 (EX. SLOW)
3. Turn the high-low switch to HIGH.
4. Turn zero control to the ON position
5. Turn the off-on switch to ON

In this position the meter will hold any good, strong, radiation count for a longer period of time - 41 seconds - before the circuit will release the meter needle from its high - full scale - reading. If you are traveling at sixty miles per hour and pass over a good, strong radioactive deposit, the meter needle will go FULL SCALE AND STAY THERE forthree-fourths of a mile AFTER you have passed the deposit - before the needle will start to drop back again.

SUB-NORMAL READINGS

Areas where the radiation readings are below normal should be investigated for possible oil deposits. It is reported that theoretically the radiation is exceptionally low over oil deposits, lower than the normal background reading. Any drop in radiation is instantly detected on the OREMASTER because it is a super-sensitive instrument.

To check for oil, turn the zero control to the OFF position. As we know that oil deposits absorb the background or a part of the background radiation and that this causes a drop in your reading, any specific area which has a major drop in reading below your background is an indication of an oil deposit.

ERRONEOUS READINGS

OREMASTERS are so sensitive that they will instantly detect luminous dial watches, compasses, etc. on the user's person or on anyone nearby; this will result in erroneous readings. All luminous articles should be kept away from the instrument. If your car or plane has a luminous instrument panel which effects the instrument, it may be necessary to order from our factory an external meter to be attached to the counter.

BATTERY REPLACEMENTS

There are two 90-volt B batteries and two flashlight cells located in the back of the OREMASTER. When the instrument becomes sluggish or the volume weak, unsnap the two snaps holding the rear hinged door closed. The door will swing down. First replace the two flashlight batteries. These two batteries should be replaced after approximately 25 hours of operation. A number of sets of flashlight cells will be used before it is necessary to replace the two 90-volt batteries. If replacing the flashlight cells does not bring the operation of the counter back to normal, replace the two #N60 90-volt B. batteries. The life of the B. batteries is approximately 400 hours. If you are going to store your OREMASTER for a long period of time, be SURE TO REMOVE THE BATTERIES. The small 22½ volt battery lasts approximately 1000 hours.

OREMASTER BATTERY-TESTING VOLTMETERS to test ALL YOUR BATTERIES ARE AVAILABLE AT \$5.95 prepaid to you. B. batteries should be replaced after the voltage drops to 60 volts and the flashlight batteries when they drop to one volt.

THE HIGH-LOW SWITCH

The high-low switch is used to locate radioactive areas and deep or distant deposits when the Range Control is set on PROSPECT HI or LOW.

Always use the HIGH position first when you start out. Any increase at all in the radiation present will give you a definite increased reading, and the meter needle will hold in a higher position.

THE PROSPECT RANGE

The prospect range is a supersensitive range on both the HIGH and LOW settings of the high-low switch. When the high-low switch is on HIGH the OREMASTER is using three supersensitive geiger tubes; when the switch is on LOW, it is using one geiger tube - but the OREMASTER is over 100 times more sensitive than some geiger counters - even when the switch is on LOW.

METER RANGE SCALES: With the high-low switch on HIGH and the Range Control set on PROSPECT, the FULL-SCALE reading is .017 MR/HR. With the high-low switch on LOW and the range control set on PROSPECT the FULL-SCALE reading is .05 MR/HR. With the high-low switch on LOW and the Range control set on .2, 2, or 20, the FULL-SCALE readings are .2, 2, and 20 MR/HR respectively. The balance of the ranges on the HIGH position on the high-low switch are uncalibrated and usually used with the speaker for super-sensitivity.

There are four extra high supersensitive ranges and starting with the most sensitive range and working down to the lower sensitive ones they are obtained as follows:

1. Range Control to HI position
High-Low switch to HIGH
Full scale reading .015 MR/HR
2. Range Control to LO
High-Low switch on HIGH
Full scale reading .02 MR/HR
3. Range Control to HI
High-Low switch to HIGH
Full scale reading .045 MR/HR
4. Range Control to LO position
High-Low switch to LOW position
Full scale reading .06 MR/HR

STANDARD METER SENSITIVE RANGES

5. Range Control .2
High-Low switch to LOW
Full scale reading is .2 MR/HR
6. Range Control
High-Low switch to LOW
Full scale reading is 2 MR/HR
7. Range Control to 20
High-low switch to LOW
Full scale reading is 20 MR/HR

CALIBRATION PROCEDURE:

1. Turn the high-low switch to the high position
2. Turn the Range control to the .2 position
3. Turn the meter speed control to the #3 position
4. Turn zero control switch to ON position
5. Turn power switch ON

Unscrew the chrome cap marked CALIB. and turn the shaft that is under the cap very slowly till the meter hand averages a zero reading. It is permissible for the meter hand to vary and to raise two divisions above zero to the right then to drop the same distance below zero so that your average reading is zero.

Turn the shaft to the right raises your meter reading and to the left lowers it. After adjusting the meter hand, replace the chrome cap.

ZERO CONTROL SWITCH:

To read the background at any time, turn the zero control switch to the OFF position. The reading you get then will be your natural background. Any specific area which has a major drop in reading below your background is an indication of an oil deposit. When in the zero ON position, any reading you get will be additional radiation that the instrument is detecting.

TREASURE HUNTER'S CODE OF ETHICS

1. Respect the rights and property of others.
2. Observe all laws, whether national, state or local.
3. Aid law enforcement officials whenever possible.
4. Never destroy priceless, historical or archeological treasures.
5. Leave the land and vegetation as it was. Fill in all holes.
6. Remove all trash and litter when you leave.
7. All treasure hunters may be judged by the example you set. Always conduct yourself with courtesy and consideration for others.

WHITE'S ELECTRONICS, INC.