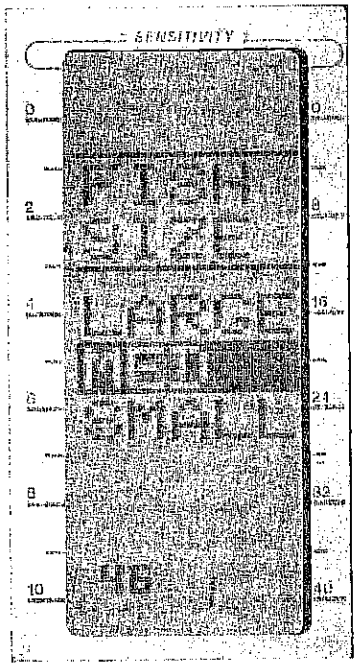
one. The numbers at the lower left of the screen are the digital bottom depth display.

To change menus, use the arrow keys in the ZONE ALARM section of the keyboard. To select an item from the menu, use the arrow keys in the RANGE section. Once you make a selection, press the CMN'D FUNCTION key to activate that selection, or press the arrow keys in the ZONE ALARM section to switch to another menu. Once all of the selections are made, press the CMN'D FUNCTION key and all selections on all menus will be activated.

For a detailed description of the menus, see the following illustrations.

MENU #1 - FISH SIZE



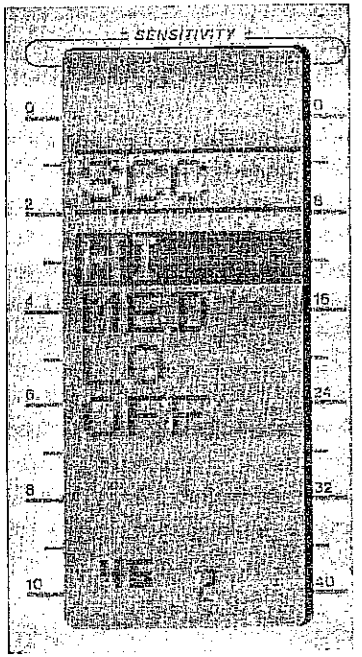
This menu adjusts the size of fish that fish alert will alarm or flash on. When the ID-6300 is first turned on, it automatically flashes on medium and large fish. You can adjust it to flash on small, medium, and large fish, medium and large fish, or large fish only.

Notice when the ID-6300 is in the automatic mode, only medium and large fish will flash. The fish size feature is not adjustable when the ID-6300 is in automatic. The menu appears with only medium on the screen. If you try to adjust it, the ID-6300 will sound an tone.

To adjust the fish size, first make certain the ID-6300 is not in automatic. Next, press the CMN'D FUNCTION key.

The menu appears with medium fish highlighted. To change to small, press the down arrow key in the RANGE section. To change to large, press the up arrow key in the RANGE section. Wait six seconds and the menu will disappear, or press the CMN'D FUNCTION key. The selection you just made will now be activated.

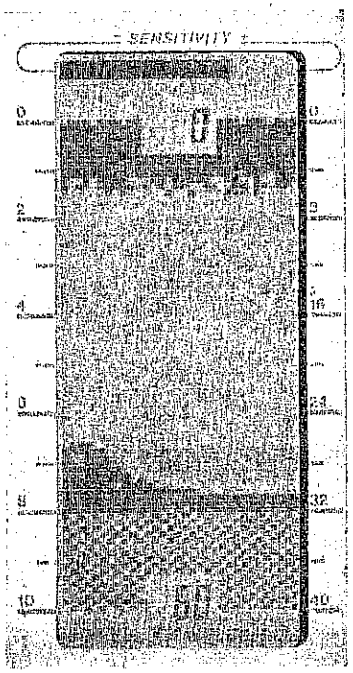
MENU #2 - SCC (SURFACE CLARITY CONTROL)



The markings --or noise--at the top of the display can at times extend many feet below the surface. This can interfere with fish signals or other targets. These markings are Surface Clutter and are caused by wave action, boat wakes, bait fish, temperature inversions, and other reasons.

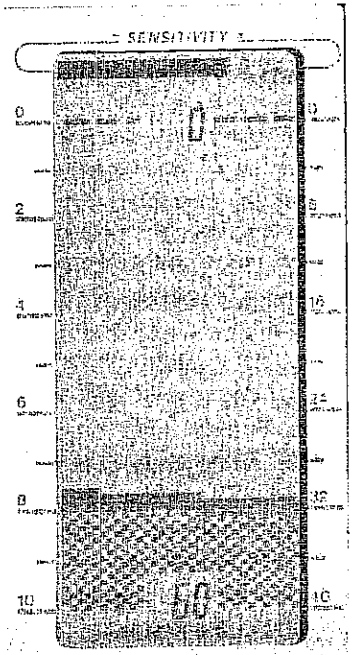
Use Surface Clarity Control (SCC) to reduce or eliminate surface clutter. SCC varies the gain of the receiver between each transmit pulse, while the receiver is "listening" for the return echoes. The gain is the lowest for echoes near the surface. It gradually increases as the depth increases.

SCC: OFF



Simulated Pictures

SCC: HIGH

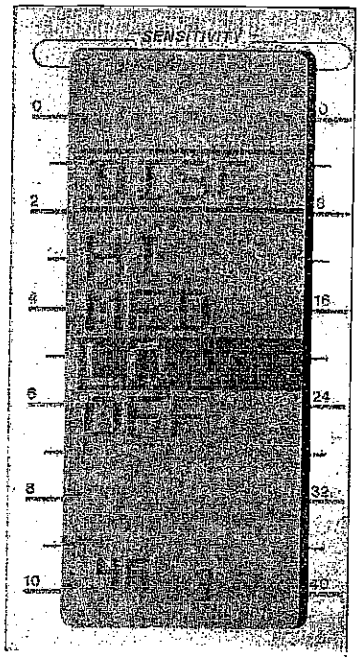


The maximum depth that SCC will affect is one-half of the selected depth range. For example, with maximum SCC, on a 0 to 60 foot range, SCC would have an effect from the surface to 30 feet.

SCC has three levels of adjustment. Turning the ID-6300 on automatically sets SCC to medium. To change to a different level, press the CMN'D FUNCTION key, then press the arrow keys in the ZONE ALARM section until the SCC menu appears. Then press the arrow keys in the RANGE section for the desired SCC level. Then press the CMN'D FUNCTION key to activate the new SCC level. See the previous page for an example.

MENU #3 - DISC (DISCRIMINATION)

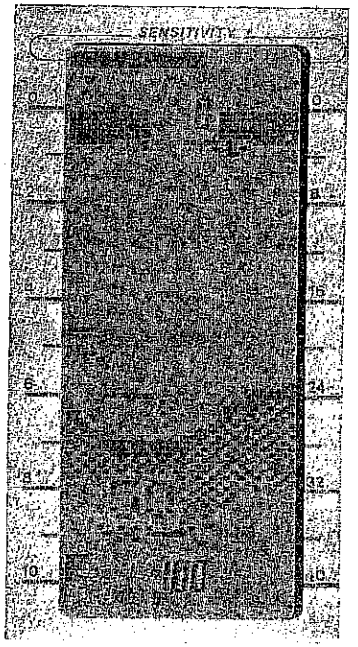
Unwanted noise on the display is a fairly common complaint. Noise is any undesired signal. It can be caused by either an electrical or acoustic source, or a combination of the two. In both cases, the noise can produce unwanted marks on the display.



The ID-6300 has Discrimination which is effective in combating noise signals. It processes all incoming echoes from the receiver, determines which ones are noise and eliminates them, displaying only the legitimate echoes. Discrimination has three levels, LO, MED, and HIGH. Discrimination is automatically set to LO when the ID-6300 is first turned on. If noise is present on the display, press the CMN'D FUNCTION key, then press the arrow keys in the ZONE ALARM section until the DISC menu appears. Then press the arrow keys in the RANGE section until the desired level is highlighted. Then press the CMN'D FUNCTION key. There should be an immediate change in the noise displayed on the screen.

Simulated Pictures

For a distictive audible alarm when fish are detected by the fish alert feature, press the FISH key. The word "ALARM" will be displayed at the bottom of the screen, right below the lower limit. Each time a fish is detected by the fish alert feature, the audible alarm will sound.

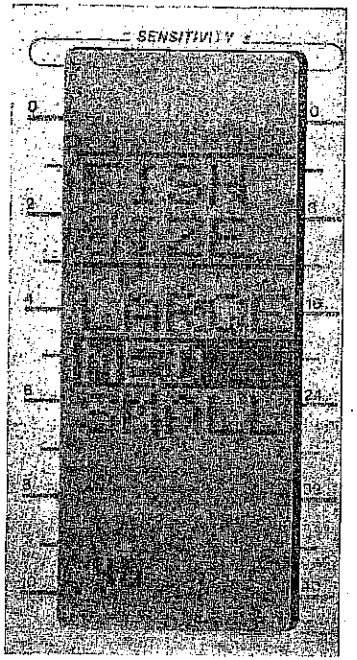


To turn the fish alert function off, press the FISH I.D. key. To turn the fish alarm off, press the FISH key. Press the OFF key in the FISH I.D. section to turn both fish alert and the fish alarm off.

(NOTE: The sensitivity is not adjustable when the ID-6300 is in automatic and FISH I.D. is on.)

LIGHT

A light allows operatio of the ID-6300 at night. The lights flash for approximately six seconds when the unit is first turned on. Press both SENSITIVITY keys at the same time to turn the lights on. To turn the lights off, press both keys again. The lights will also go out when the ID-6300 is turned off.



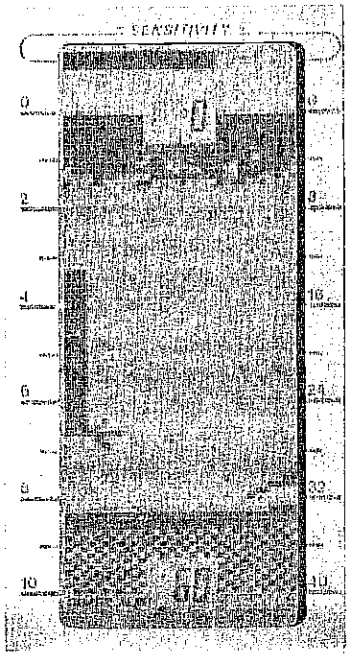
CMN'D
FUNCTION

COMMAND FUNCTION

The ID-6300 has "menus" of commands that allow you to customize the unit to your needs. There are 12 pages of menus available. These menus are accessed with the COMMAND FUNCTION key. Press it, and the first menu appears for six seconds. As you can see, the first menu is FISH SIZE. The number "1" at the bottom of the screen indicates this is menu number

alarm window up. Press the down arrow key to move the top of the zone deeper. Six seconds after the adjustments are made, the alarm bar disappears.

Simulated Picture

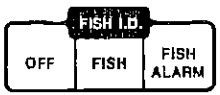


Set the bottom of the zone in the same manner using the DEEP SET key. Press the DEEP SET key. The alarm bar displays with the small arrow pointing to the bottom of the bar. Then press the up arrow key to make the bottom part of the window move shallower. Or you can press the down arrow key to move the bottom of the window deeper. Release the keys and the bar will remain on the screen for six seconds, then disappear.

When the "ZONE ALARM" signal is on, the alarm is active. If you wish to view the zone alarm bar, simply press either the SHALLOW SET or DEEP SET keys. The bar will be displayed for six seconds. The zone alarm bar can be turned on permanently with a menu. See the COMMAND section for details. When the alarm is triggered by an echo, an audible tone will sound.

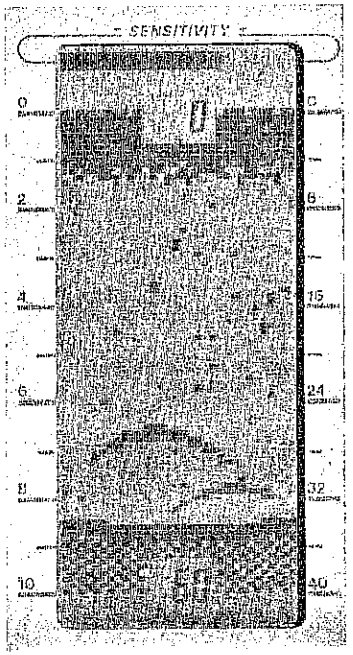
To turn the Zone Alarm off, press both the SHALLOW SET and DEEP SET keys at the same time. All of the Zone Alarm settings will remain in memory until the ID-6300 is turned off. Pressing either shallow or deep set keys will turn the Zone Alarm back on with the previous settings.

If the range is changed, the zone alarm may need to be changed also since it does not track range settings.



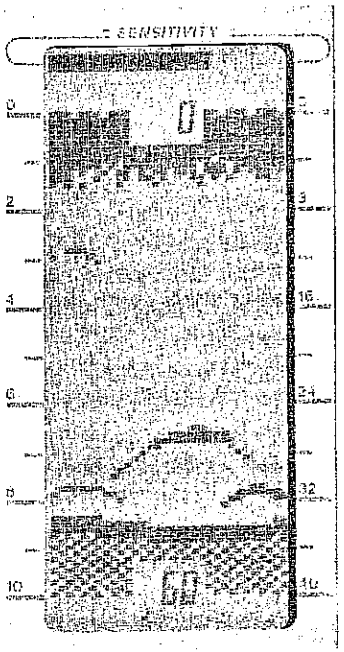
FISH I.D.

The Fish I.D. function is automatically enabled when the ID-6300 is turned on. An "F" displays at the lower left corner of the screen signifying fish alert is on. As signals are scrolled across the display, targets flash that are most likely fish. The "FISH I.D." can be set for small, medium, and large fish, or only medium and large, or exclusively large fish. This is accomplished with a menu selection. See the COMMAND section for details.



DISCRIMINATION: OFF

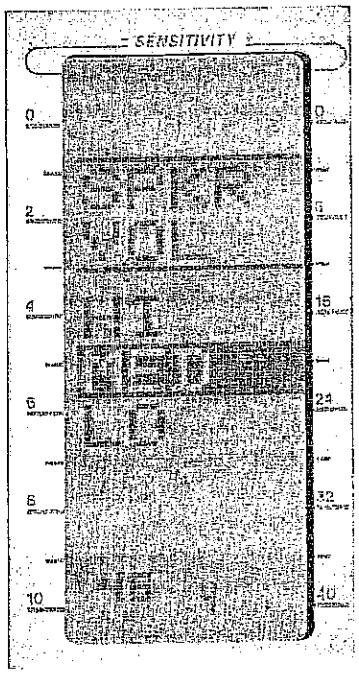
Simulated Pictures



DISCRIMINATION: PROPER SETTING

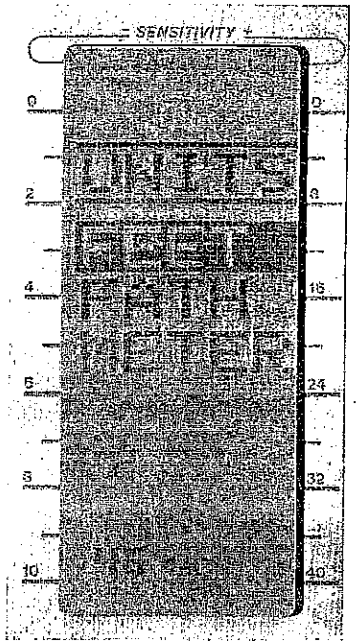
MENU #4 - SPEAKER VOLUME

This menu adjusts the volume of the ID-6300's speaker. To adjust the speaker volume, press the CMN'D FUNCTION key, then press the arrow keys in the ZONE ALARM section until menu #4 appears. To increase the speaker volume, press the up arrow in the RANGE section. To decrease the volume, press the down arrow. Wait six seconds or press the CMN'D FUNCTION key to activate your selection.



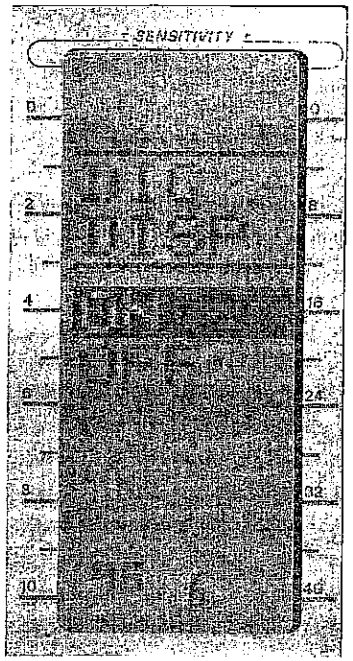
MENU #5 - FEET, FATHOMS, or METERS

The ID-6300 can display the depth in either feet, fathoms, or meters. At first, the display reads in feet. To change it to fathoms or meters, press the CMN'D FUNCTION key. Then press the arrows in the ZONE ALARM section until the UNITS menu appears. Press the arrow keys in the RANGE menu until the desired unit of measure (feet, fathoms, or meters) is highlighted, then press the CMN'D FUNCTION key to activate your selection. Turning the unit off reverts the range to feet.



MENU #6 - DIGITAL DISPLAY

This menu allows you to turn the digital display on or off. When the ID-6300 is first turned on, the digital is automatically on. To turn it off, press the CMN'D FUNCTION key. Then press the arrows in the ZONE ALARM section of the keyboard until this menu appears. Use the arrow keys in the RANGE section to select ON or OFF. The digital will be turned on or off immediately.



If you wish to turn the digital display off, see the COMMAND section for details.

ALARMS

The ID-6300 has two different alarms, a zone alarm and a fish alert. The zone alarm consists of a bar that displays on the left side of the screen. The alarm "chirps" whenever the ID-6300 detects an echo inside the boundaries of the zone bar.

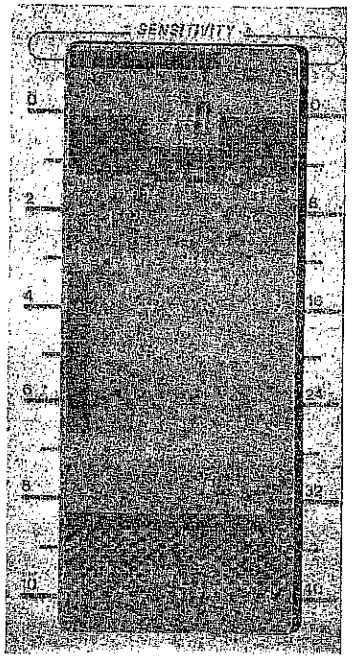
Fish I.D. is an exciting new concept in fish identification. It identifies fish by flashing their signals on the display. This "fish flash" feature adjusts for small, medium, and large fish. Or large fish only, if desired.

With Fish I.D., an audible alarm also sounds only when fish are detected. To separate the alarms, the fish alert's tone sounds different than the zone alarm. Both alarms may be used at the same time.

Simulated Picture

ZONE ALARM

To set the Zone Alarm, press the SHALLOW SET key in the ZONE ALARM section of the keyboard. The words " ZONE ALARM" displays in the lower left corner of the screen. A vertical bar also displays on the left side of the screen for six seconds. This is the Zone Alarm's "window." Any echo that appears between the top and bottom of this bar will sound the alarm. Adjust both the shallow and deep ends of this bar to make a smaller or larger alarm "window."



To adjust the shallow (top) alarm, press the SHALLOW SET key. The alarm bar displays with a small arrow pointing to the top of the bar. This signifies that the top or shallow portion of the bar is ready for adjustment. Then press the up arrow key to move the top of the

distinguish weeds from trees on the bottom, or fish from structure.

When the ID-6300 is first turned on, the GRAYLINE function is automatically on. To turn GRAYLINE off, press the GRAYLINE key on the keyboard's SENSITIVITY section. To turn it on, press the GRAYLINE key again.

DIGITAL

Built inside the ID-6300 is a complete digital sonar. It automatically discriminates between the valid bottom echoes and false echoes from fish, thermoclines, or other signals. The digital display will show only the bottom depth. Use it any time, regardless of the mode the ID-6300 is in.

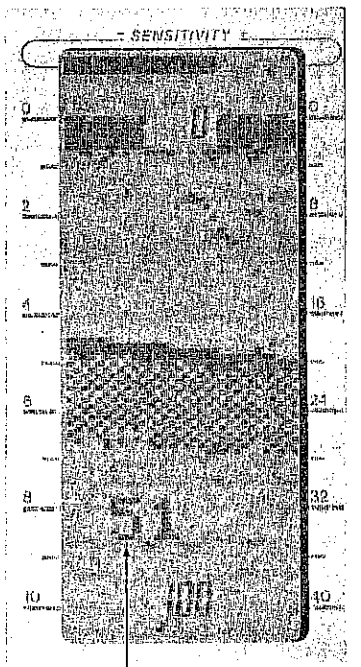
At power on, the digital will flash "0" until it has "locked on" to the bottom signal. Once it has acquired the bottom depth, it will display the depth in the lower left of the display.

The digital can display the bottom depth in tenths of a foot down to 99.9 feet. See the COMMAND section for details.

There are three different sizes of the digital depth display. They can be easily changed with a menu selection. See the COMMAND section for details.

To get the maximum performance out of your digital sonar, stop the chart by pressing both arrow keys at the same time in the keyboard's chart section. This turns the ID-6300 into a digital sonar only and allows it to better track the bottom signal. A good reason to use the digital is if you are going to travel at high speed and you just want to know the bottom depth. Stop the chart, then change to the large digital number size. This will give both the fastest possible depth updates plus an easy-to-read display.

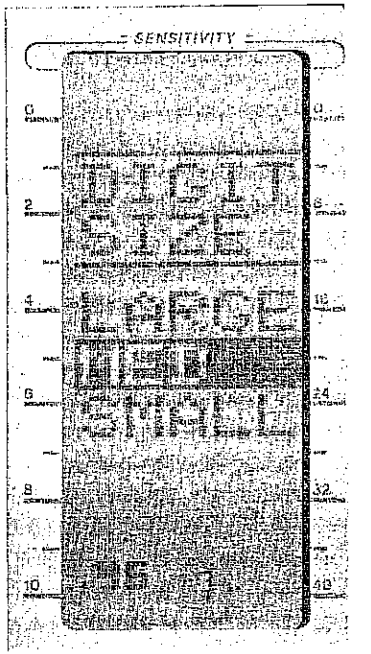
Simulated Picture



DIGITAL BOTTOM DEPTH

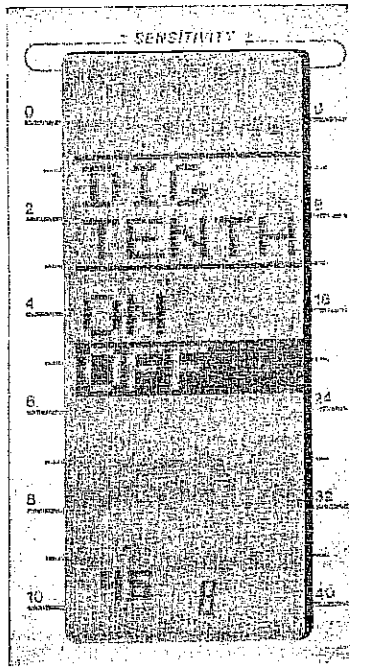
MENU #7 - DIGITAL SIZE

The digital depth display has three size selections: small, medium, and large. When the ID-6300 is first turned on, the depth is displayed with the medium size numbers. To change to a different size, press the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu 7 displays. Next press the up or down arrows in the RANGE section of the keyboard to select the desired digital number size. Wait six seconds for the menu to disappear or press the CMN'D FUNCTION key to activate.



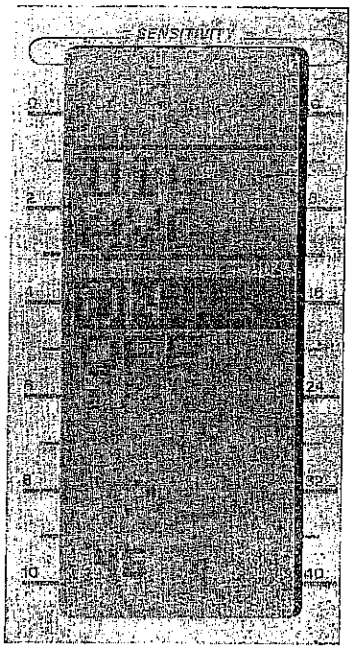
MENU #8 - TENTHS

The digital sonar displays the bottom depth in whole numbers when the ID-6300 is first turned on. To display the depth in tenths of a foot, select the DIG TENTHS menu. The ID-6300 will display tenths of a foot down to 99.9 feet. Below this the depth display will automatically revert to whole numbers. To select the DIG TENTHS menu, press the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu #8 displays. Next press the up or down arrows in the RANGE section of the keyboard to turn tenths on or off. Wait six seconds for the menu to disappear or press the CMN'D FUNCTION key to activate.



MENU #9 - DIGITAL AVERAGING

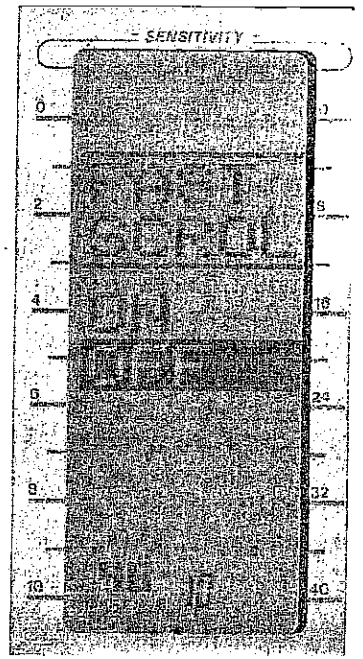
The digital sonar used in the ID-6300 is a highly sensitive device that gives rapid updates of the water's depth. Under most conditions, the bottom contour changes so quick that the display appears to "jitter". In other words, the display will change so quickly that it can be difficult to determine the actual bottom depth. To minimize this condition, the ID-6300 averages the bottom readings and displays the result. When the ID-6300 is first turned on, averaging is enabled. To turn it off, select menu #8 by first pressing the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu 8 displays. Next press the up or down arrows in the RANGE section of the keyboard to turn averaging on or off. Wait six seconds for the menu to disappear or press the CMN'D FUNCTION key to activate.



MENU #10 - FAST SCROLL

The fast scroll feature causes targets on the display to scroll very fast. Use this feature when you're travelling at high speed. To turn Fast Scroll on, press the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu #10 displays. Next press the up or down arrows in the RANGE section of the keyboard to turn Fast Scroll on or off. Wait six seconds for the menu to disappear or press the CMN'D FUNCTION key to activate.

NOTE: Turning on Fast Scroll turns the digital, automatic, and fish I.D. off. The



the lower limit. Automatically placing the bottom signal in this window, the ID-6300 tracks it as it moves shallower or deeper. Press the ZOOM key. If you don't have a 20 foot window, press either the up or down arrows in the RANGE section until the upper limit is 20 feet shallower than the lower limit. The ID-6300 will choose an upper and lower limit that will place the bottom signal in the 20 foot window. The bottom will always be inside this window. If the segment size is 40 feet or greater, the window limits will end in zero (10,20,30, etc.). Otherwise the limits are in one foot increments.

To exit from this function, press the ZOOM key.

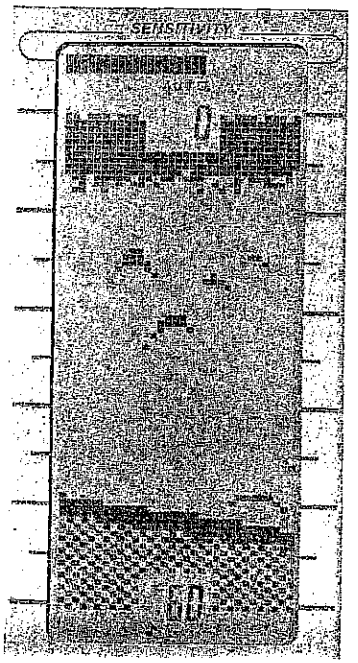
GRAYLINE

GRAY LINE

The GRAYLINE functions tells the relative strength of signals displayed on the screen. It also gives clues to the composition of the bottom. In other words, you can tell if the bottom is soft or hard. A hard bottom returns a strong signal causing a wide gray line. A soft, muddy or weedy bottom returns a weaker signal which is emphasized with a narrow gray line.

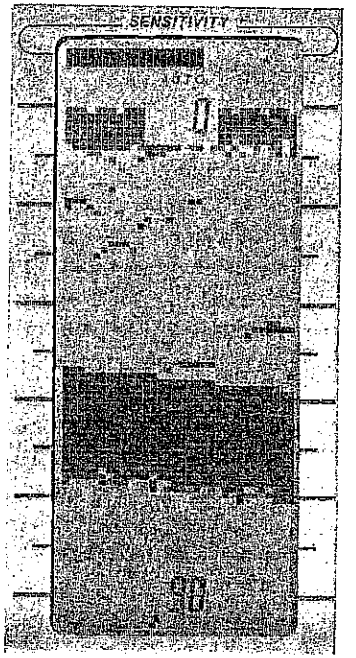
If you have two signals of equal size, one with gray and the other without, then the target with gray is the stronger signal. This helps

GRAYLINE: ON



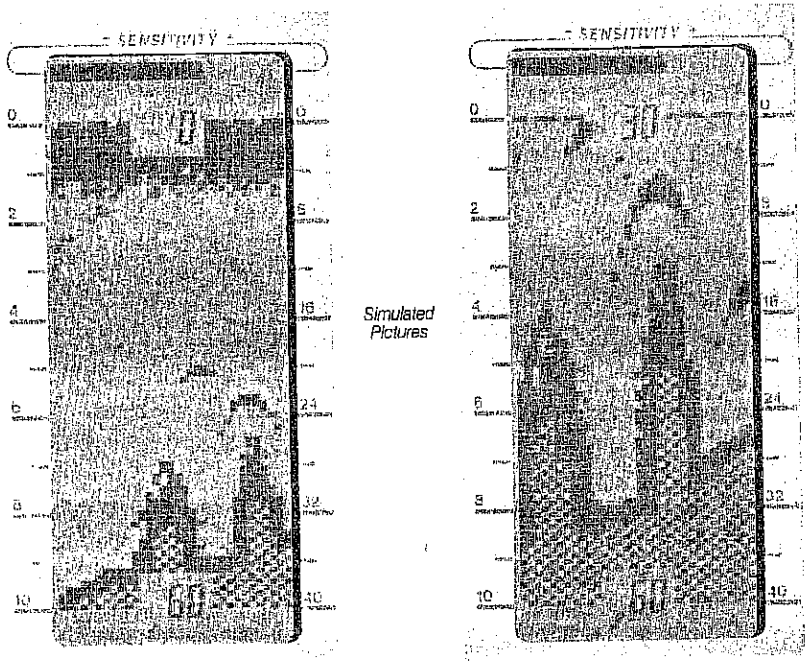
Simulated Pictures

GRAYLINE: OFF



ZOOM

Often it's desirable to expand or "ZOOM" a section of the display to show more detail. You can do this on the ID-6300 by using the ZOOM feature. If the unit is in the manual mode, press the ZOOM key to double the size of the targets. For example, if the range is 0-60 feet, pressing the ZOOM key changes the range to 30-60 feet. This 30-60 range is called a "window". To change the window size, press the up or down arrows in the RANGE section. For example, if you have a 30 foot window, pressing the up arrow in the RANGE section will change the window to 20 feet. Press the up arrow again and the zoom window will change to 10 feet. This is the smallest zoom window. The largest zoom window is 300 feet.



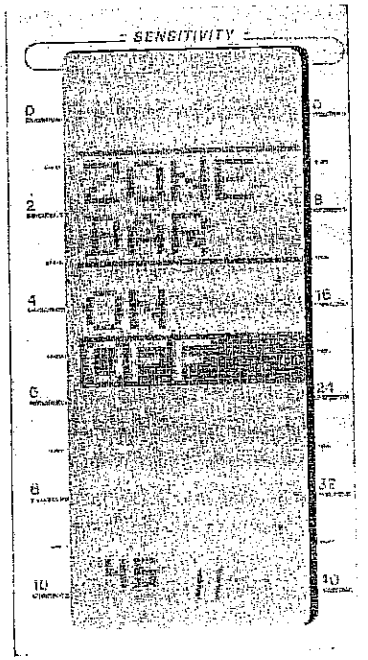
Simulated Pictures

AUTOMATIC BOTTOM TRACKING

The lower limit will change as the bottom depth changes, if the ID-6300 is in the automatic mode. To zoom in on the bottom and track it as its depth changes, follow the steps below.

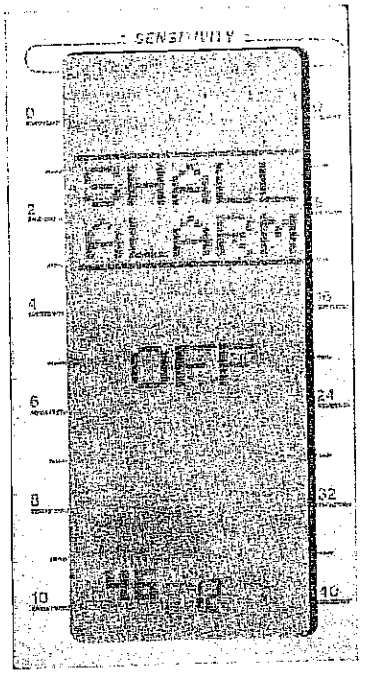
To use this feature, first make certain the unit is in the automatic mode. Next, choose a zoom window. For example, lets use a 20 foot zoom window. This means that the ID-6300 will keep the upper limit 20 feet above

ID-6300 can only be used in the manual mode when Fast Scroll is in use. When Fast Scroll is turned off, the ID-6300 is reset to a power-on condition. Automatic and the digital will be turned back on. All other features can be used and will operate normally.



MENU #11 - ZONE BAR

Select this menu when you wish to turn the zone alarm bar on permanently. This also turns the zone alarm on if it isn't already. To turn the zone alarm bar on, press the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu 11 displays. Next press the up or down arrows in the RANGE section of the keyboard until the word "ON" is highlighed. Wait six seconds for the menu to disappear or press the CMN'D FUNCTION key to activate.



MENU #12 - SHALLOW ALARM

The shallow alarm alerts you to shallow water. It only triggers off the bottom signal. For example, set the shallow alarm to 5 feet. If the ID-6300 detects the bottom at five feet or less, it will sound an alarm. The shallow alarm depth ranges are: OFF, 5, 10, 15, 20, 25, 50, 100, 150, 200, 300 feet.

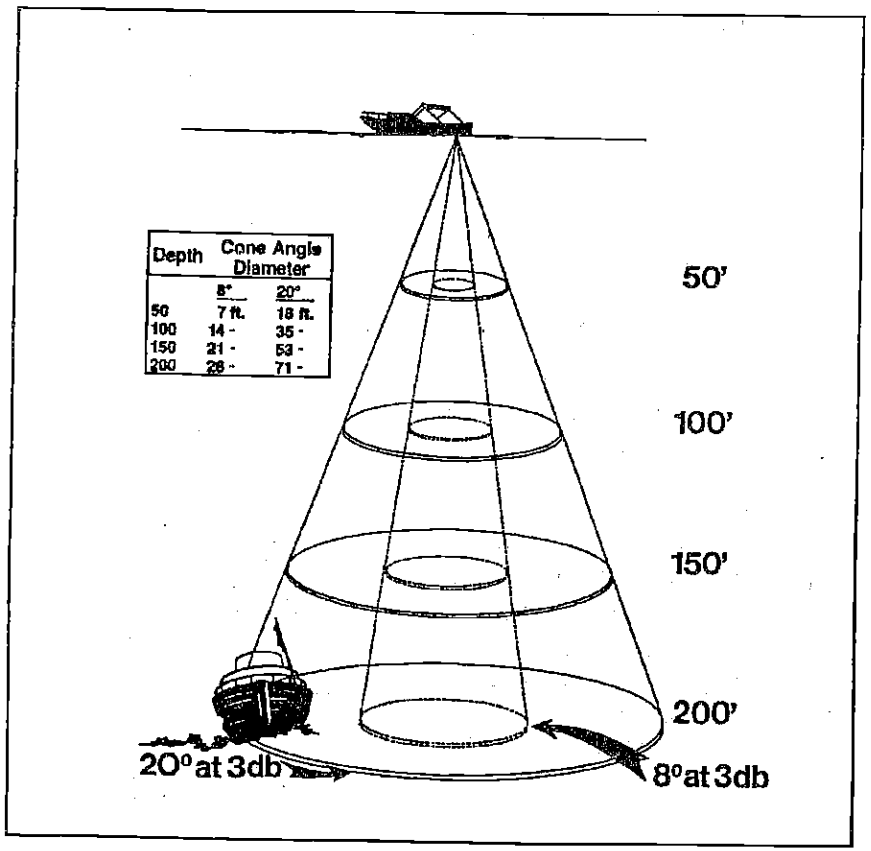
To turn the shallow alarm on, press the CMN'D FUNCTION key. Then press the up or down arrow keys on the ZONE ALARM section until menu 12 displays. Next press the up or down arrows in the RANGE section of the keyboard to select the desired digital number size.

TRANSDUCERS AND CONE ANGLES

The sound waves from the transducer spread out into the water in a cone shaped beam. This looks much like the beam from a flashlight. The angle between the outside edges of the cone is the cone angle.

Eagle offers a choice of transducers with either an 8 or 20 degree cone angle. These will interchange with any of the 192 kHz sonar products. In other words, use any Eagle sonar instrument with any Eagle transducer of the same frequency with no loss of performance. However, the use of any other manufacturers' transducer will result in a loss of performance.

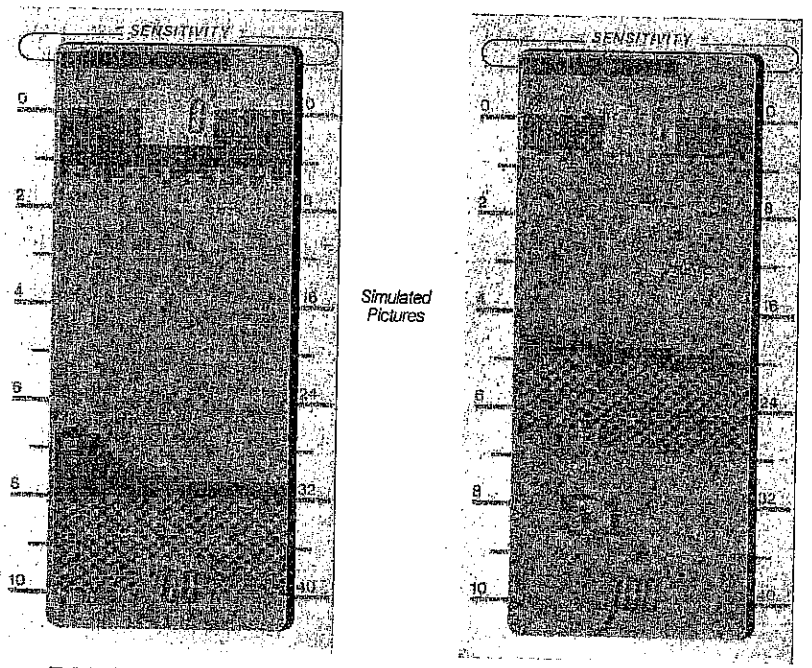
Typically, wide cone angle transducers (20 degrees) are ideal for operating in shallow to medium water depths. The 20 degree cone angle allows you to see more of the underwater world. In 15 feet of water the 20 degree cone covers an area about six feet across. The 8 degree transducer covers only about a two foot circle.



LOWER LIMIT

To change the lower limit, first make certain the word "AUTO" is off at the top of the screen. This indicates that the automatic mode is off. (Note: This also disables the automatic sensitivity function.) If the automatic mode is on, press the AUTO key once to disable it. Next, press one of the arrow keys in the RANGE section.until the desired lower limit appears. The display will immediately change to the new depth range and display the new lower limit at the bottom of the screen. The available depth ranges are: 10, 20, 40, 60, 100, 200, 400, and 600 feet.

NOTE: The maximum lower limit the ID-6300 can display is 600 feet. However, the actual depth that it can reach is dependent on water and bottom conditions, plus the quality of the transducer installation.



RANGE: 0-60 FEET

PRESS: RANGE DOWN ARROW

RANGE: 0-100 FEET

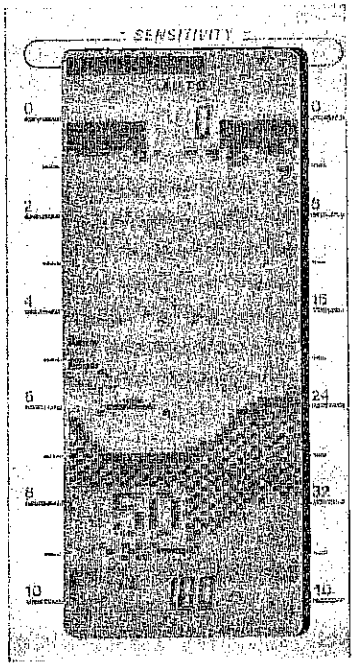
Changing the lower limit is possible, even if the Automatic function is on. However, the ID-6300 won't accept a lower limit less than the depth of the bottom while it's in the Automatic mode. For example, the ID-6300 is in Automatic, and the range is 0 to 60 feet, with a bottom signal at 50 feet. Selecting a lower limit of 40 feet causes the ID-6300 to sound an alert. The lower limit stays at 60 feet.

and hold the right arrow key for example, the bar will start moving to the right. This signifies that the chart speed is increasing. There are 32 steps of chart speed. By holding either arrow key, the display can be speeded up or slowed down. When the horizontal bar reaches the far right side of the screen, the chart speed is at its maximum value. The ID-6300 will sound a tone indicating maximum chart speed.

The automatic mode or digital function limits the maximum chart speed. (The chart bar will stop one step from the far right and the audible tone will sound). Turning both the digital and the automatic mode off will allow the maximum chart speed to be attained.

At times it is desirable to stop or "freeze" the display to examine an echo before it scrolls off the screen. Press both arrow keys in the CHART section *at the same time* to stop the chart. The dashed line at the top of the display will flash, signifying the chart is stopped. Press both arrow keys again to start the chart moving at the last chart speed setting. If the digital sonar is on, the bottom depth will be displayed. The digital does not stop when the chart is in the "freeze" mode.

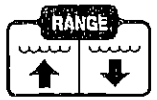
Simulated Picture



SCALE MARKERS

SCALE

There are ten scale markers printed on both sides of the display. This helps to determine the depth of a target. For example, if the range is 0 to 60 feet, then each mark is equal to six feet. If a target (such as a fish) is next to the 5th line, then it is 30 feet deep. (5 lines times 6 feet = 30 feet.) To make it easier to use the depth scale, use ranges in multiples of ten, i.e. 10, 20, 30, etc.



RANGE

When the ID-6300 is in automatic, the ranges change to keep the bottom signal on the display as the bottom depth varies. At times, however, it may be desirable to expand the range or zoom in on a target. Pressing the ZOOM key doubles the size of targets on the screen.

The 20 degree transducer is almost always the best to use in fresh water, the 8 degree mostly in salt water. In a deep water environment, (300 feet - fresh water, 100 feet - salt water) the narrow cone angle is more desirable. Since the sound energy is concentrated in a smaller area, it can penetrate to much deeper depths.

Both 8 degree and 20 degree transducers give accurate bottom readings, even though the bottom signal is much wider on the 20 degree model. This is because you are seeing more of the bottom. Remember, the shallow edge of the signal shows you the true depth. The rest of the signal tells you whether you are over rocks, mud, etc.

Paint transducers on salt water boats with a thin coat of anti-foulant paint to prevent organisms from growing. If unchecked, barnacles and other marine growth will cause a decrease in the transducer's sensitivity. Do not use a metal based anti-foulant paint as it will decrease the transducer's sensitivity. There are special anti-foulant paints specifically designed for transducers. They're readily available at most marine dealers.

SIGNAL INTERPRETATION

Since your ID-6300 is both extremely sensitive and powerful, it gives an accurate picture of the bottom that your boat is passing. A bottom of firm sand, gravel, shell, or hard clay returns a fairly wide signal. If the automatic sensitivity is off and the signal narrows down, then it means that you have moved over a mud bottom. Mud absorbs the sound wave and returns a weak signal. Turn up the sensitivity. If you have the automatic sensitivity turned on, watch the sensitivity bar. As the boat passes over the mud bottom, the ID-6300 will automatically increase the sensitivity to maintain a good bottom signal. The sensitivity bar will help you in determining if the bottom is soft or hard. If it increases while in the same depth of water, then the boat has moved over a soft bottom. If it decreases, then it is over a hard bottom. Of course, as the water depth increases or decreases, the sensitivity will also change.

Big rocks or stumps on a smooth bottom send back signals above the bottom level signal. The height of the signal depends on the target's height. As you pass over a post, it will be clearly visible as a short line extending above the bottom signal.

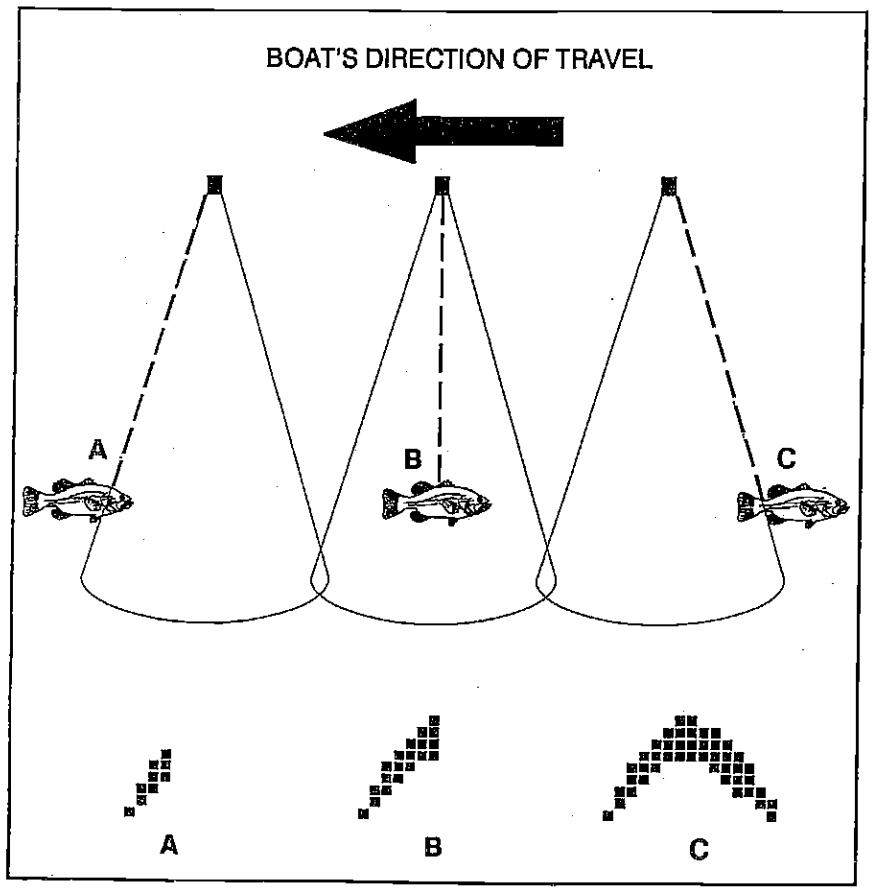
A steep slope returns a wide signal, the steeper the wider. Signals returned from a high underwater cliff are usually the widest of all.

Brush usually lies on the bottom and shows up as clumps rising above the bottom signal. Brush signals look similar to large rocks, however their signal is not as strong as rock.

FISH SIGNALS

The signals displayed on the ID-6300 by fish are identified by various shaped markings in certain patterns, as opposed to random marks created by noise. Or the solid, continuous markings made by the bottom.

Typically, fish are identified by a characteristic arch that separates them from their stationary surroundings. The reason for this is shown below. The distance to a fish when it moves into the sonar's cone of sound is shown as "A" below. When the fish has moved into the center of the cone, the distance to it will be shorter, "B". As it moves out of the cone, the distance will increase again as shown in "C".



When the horizontal bar reaches the far right hand side of the screen, the sensitivity level is at maximum. With high sensitivity settings, a second bottom echo (second echo) may appear. This is normal. It's caused by the returning signal reflecting off the surface of the water. Then it makes a second trip to the bottom and back again.

To turn Auto Sensitivity back on, press the AUTO key. Remember, pressing the AUTO key turns both automatic sensitivity and auto ranging functions on and off at the same time.

AUTO SENSITIVITY OPERATION

When the ID-6300 is in the automatic mode, the receiver's sensitivity automatically adjusts to the surrounding conditions. The microcomputer places it at a level slightly above the minimum required to pick up the bottom signal.

Changing the sensitivity level while the ID-6300 is in the automatic mode is possible. (But only if "FISH I.D." is OFF.) This may be desirable if the sensitivity level is not enough to show fish or other small detail. The ID-6300 will increase the sensitivity to pick up the bottom signal, then add in the level you programmed. If desired, you can add sensitivity up to the maximum.

To adjust the sensitivity while the ID-6300 is in the automatic mode, make certain Fish I.D. is off. (See the Fish I.D. section). Then simply press either the right arrow key > to increase the sensitivity. Press the left arrow key < to decrease it. If the value goes below the minimum required to keep the bottom signal, the ID-6300's audible tone will sound an alert. The same is true if you try to go above the maximum level. As you press the arrow key, the sensitivity bar will move right or left, according to the sensitivity level chosen.

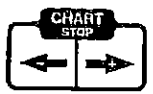


CHART SPEED

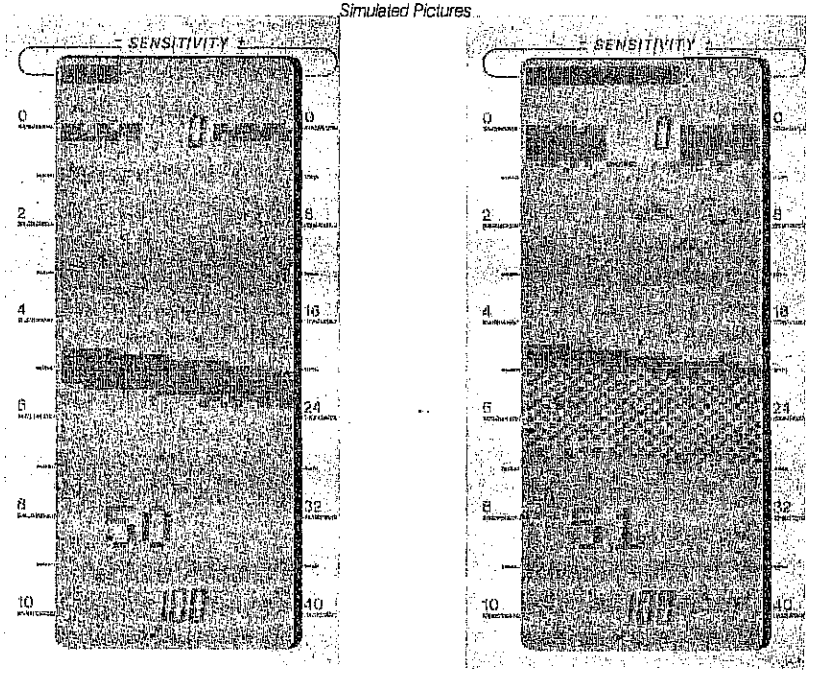
At power on, the chart speed scrolls at a pre-determined speed. For a higher speed, press and hold the right arrow key in the CHART section of the keyboard. When the scroll speed reaches the desired speed, release the key. To slow the display, press and hold the left arrow key. Pressing either of these keys causes the sensitivity bar at the top of the display to change to a dashed line. The letters "CHT" will appear in a window near the top of the display. This bar represents the chart speed. If you press

A horizontal bar at the top of the screen displays the sensitivity level. When the sensitivity is at minimum, the bar is very short. Increasing the sensitivity causes the bar to travel to the right, increasing in length correspondingly. Setting the sensitivity to maximum will cause the bar to extend across the top of the display. (There are 32 steps of sensitivity available.)

To place the ID-6300 in manual mode, press the AUTO key once. This turns auto sensitivity off. The word AUTO at the top of the display will disappear, signifying that the ID-6300 is in the manual mode. To increase the sensitivity, press and hold the right arrow key until the sensitivity is at the desired level. The left arrow decreases sensitivity in the same manner. Notice how the sensitivity bar moves as you change settings. When you press the right arrow key, the bar moves to the right, indicating an increase in sensitivity. Pressing the left arrow key moves the bar to the left, showing the sensitivity has decreased accordingly. You'll also see the change on the display.

The figure on the left shows a graph with too little sensitivity. On the right, the graph has a proper sensitivity setting. A fish along with higher surface clutter are now visible, and the bottom signal has widened.

Simulated Pictures



SENSITIVITY: TOO LOW

SENSITIVITY: PROPER

If a partial arch occurs most of the time on your unit (the mark curves up, but not back down, or vice-versa) it could be the transducer is not pointing straight down. Adjust a transom mounted transducer until the fish show the distinctive arch. This may take some trial and error until you achieve the correct mounting.

Remember, there must be some movement between the boat and the fish to develop the arch. Usually, this means trolling at very slow speeds with the main engine in gear at a minimum throttle setting.

The depth of the water will affect the size and shape of the fish arch due to the cone angle diameter. For example, if the cone passes over a fish in shallow water, the signal displayed on the ID-6300 may not arch at all. This is due to the narrow cone diameter and the resolution limitations of the display. Even the 20 degree transducer has only a 3 foot diameter at this depth.

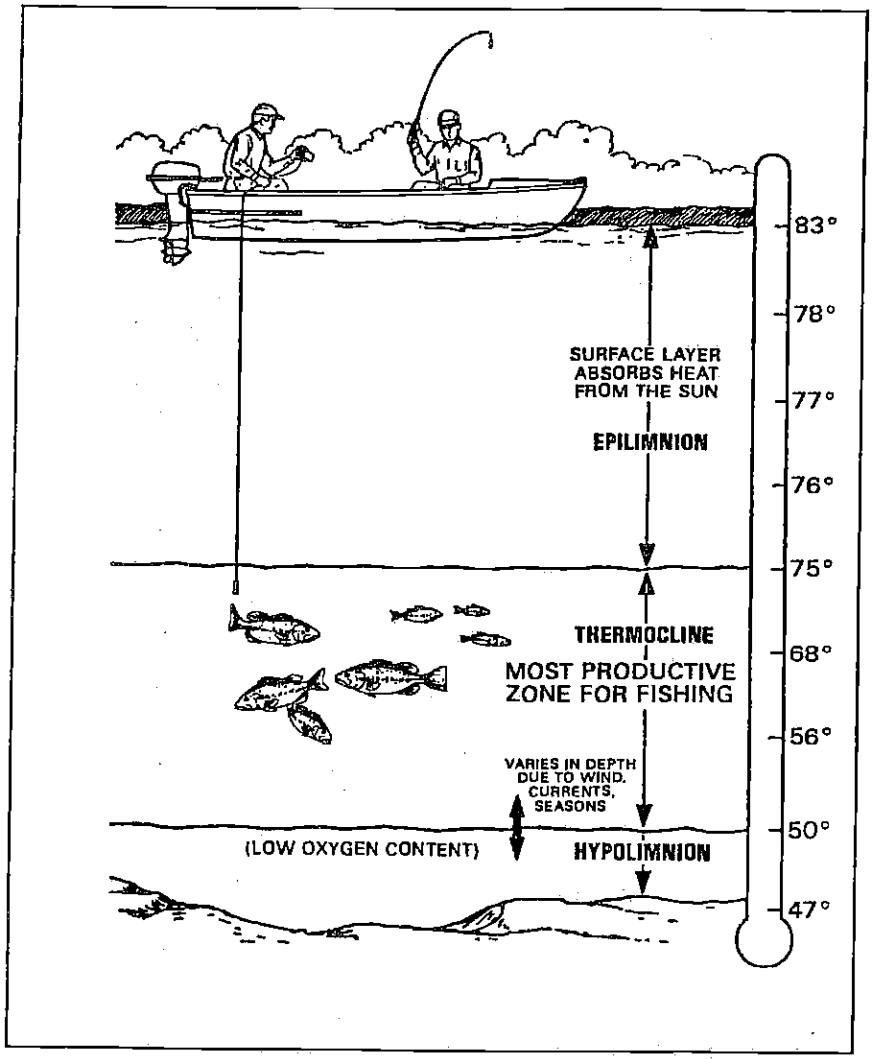
Compared to a paper graph, a ID-6300 cannot show as fine of detail. The reason for this is the pixels (dots on the screen) are much larger than a paper graph's markings. Therefore, the ID-6300 cannot show fish arches as well as a graph. Plus, it requires a bit more work initially to read and interpret the screen than a paper graph.

Very small fish probably will not arch at all. Medium sized fish will show a partial arch, or a shape similar to an arch if they're in deep water. Large fish will arch, but turn the sensitivity up in deeper water to see the arch. Because of water conditions, such as heavy surface clutter, thermoclines, etc., the sensitivity sometimes cannot be increased enough to get fish arches.

One of the best ways to get fish arches is to expand or "zoom" a segment of the water. For example, 40 to 60 feet. The smaller the segment, the better the screen resolution will be. Then, turn up the sensitivity as high as possible without getting too much noise on the screen. In medium to deep water, this method should work to display fish arches.

WATER TEMPERATURE AND THERMOCLINES

Water temperature has an important-if not controlling-influence upon the activities of all fish. Fish are cold blooded and their bodies are always the temperature of the surrounding water. During the winter, colder water slows down their metabolism. At this time, they need about a fourth as much food as they consume in the summer.



Most fish don't spawn unless the water temperature is within rather narrow limits. To find the different temperatures, a surface temperature meter, such as the EDT-20 is a valuable aid to your boat. This unit provides an extremely quick response to identifying the desired surface water spawning temperatures for various species. Trout can't survive in streams that get too warm. Bass and other fish eventually die out when stocked in lakes that remain too cold during the summer. While some fish have a wider temperature tolerance than others, each has a certain range within which it tries to stay. Schooling fish suspended over deep water lie at the level that provides this temperature. We assume they are the most comfortable here.

OPERATION

When the ID-6300 is first turned on, it automatically finds and displays the bottom depth, and adjusts the sensitivity to the proper level. It also sets the scales to a range that will keep the bottom signal on the display; plus much more. Using the ID-6300 in this mode is simple and allows you to concentrate on fishing. However, virtually every function of the unit is manually adjustable so it can be "fine tuned" to the surrounding conditions.

ON

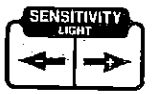
The ON key is located in the lower right corner of the keyboard. It's easily found in this location - even at night. To turn the ID-6300 on, press the ON key. The chart lights will begin flashing, then stop after six seconds. The chart will begin scrolling across the display and the number "0" will flash. This number is the digital bottom depth display. After the unit finds the bottom, it displays the digital depth.

OFF

To turn the ID-6300 off, press the OFF key.

AUTO

Turning the ID-6300 on enables the automatic mode. To switch to the manual mode, press the AUTO key located above the ON key. Pressing the AUTO key erases the word AUTO at the top of the display. This cancels auto sensitivity and ranging, giving you complete manual control of the unit. Return the ID-6300 to automatic at any time by pressing the AUTO key again.

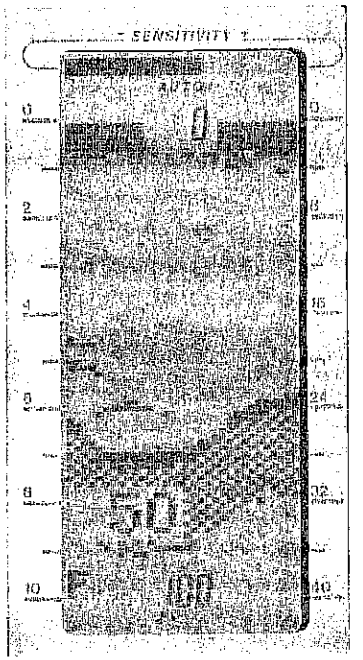


SENSITIVITY-MANUAL OPERATION

When first turned on, the ID-6300 is in the AUTO SEARCH mode. The micro-computer automatically adjusts the sensitivity and range to find and lock onto the bottom. You can leave the sensitivity in the automatic mode or manually adjust it to suit conditions.

DISPLAY INTERPRETATION

Simulated Picture



Now let's look at the display. First, we'll turn on the ID-6300 by pressing the ON key. The lights will flash for six seconds.The chart is now scrolling the return echoes across the screen and the digital is searching for the bottom depth. It's flashing 0 because it hasn't found the bottom yet. Once it finds the bottom, the depth is displayed.

Here the ID-6300 has found the bottom at 50 feet. The range is zero to 100 feet. It automatically chooses a lower limit that places the bottom signal near the bottom of the display.

The bar at the top of the display is the sensitivity bar. It shows the sensitivity in use. The bar extends from left to right. A very short bar indicates minimum sensitivity. Setting the sensitivity to maximum causes the bar to run completely across the top of the display.

The word AUTO indicates the ID-6300 is in the automatic mode.

The top line of the display is always a dashed line. It moves from right to left, showing the chart is moving. As the chart speed increases or decreases, the dashed line changes speed accordingly. Stopping the chart causes the line to flash on and off.

The range is both an upper limit and a lower limit at the top and bottom of the display, respectively. In this example, the range is 0 - 100 feet. Scale markers printed on both sides of the display help determine the actual depth.

For best results, read the Operation section of this manual. It explains in detail all of the functions that are in this section, plus other features not discussed here.

The temperature of water in the lake is seldom constant from top to bottom. Layers of different temperatures form, and the junction of a warm and cool layer of water is a thermocline. The depth and thickness of the thermocline can vary with the season or time of day. In deep lakes there may be two or more at different depths. Thermoclines are important to fishermen because they are areas where fish are active. Many times bait fish will be above the thermocline while larger game fish will suspend in or just below it.

The ID-6300 can detect this invisible layer in the water, but the sensitivity will probably have to be turned up to see it.

A knowledge of the water temperatures various fish prefer, and in which they usually remain, helps you get the most from your ID-6300.

SURVEYING A LAKE

The most successful anglers on any body of water are those who fish it day after day and year after year. Eventually, they learn the hot spots that produce fish consistently. They discover through experience where, and at what depth, they can expect to find the fish they want at any season. And they realize that these productive areas change throughout the year depending on water level, temperature, food, and other factors.

With the ID-6300, anyone can eliminate guesswork and concentrate on the areas where fish are likely to be. Even if it's the first time on the lake!

The most efficient way to become acquainted with a body of water is to survey it with your ID-6300. Start with a map of the lake, if possible, and indicate the promising spots in relation to landmarks on shore.

As you go about your survey, your ID-6300 will tell you the depth and type of bottom. It will also reveal suspended fish. Multiple signals on the dial usually indicate a good school of fish and it's worth it to stop and fish for them. You may not get any further.

Keep a few marker buoys in the boat, ready to toss overboard. When the ID-6300 indicates a school of fish, throw the buoy out. The string will unwind until the sinker hits bottom. Then, because of the marker's flat shape, it won't unwind any further. With the school thus marked, you can make your turn and come back to fish in exactly the right spot. This is essential when you're far from shore on a big lake. Unless you mark the school of fish when you're over it, you may not be able to find it again.

BAIT FISH

The importance of bait fish to successful fishing can't be over-emphasized. They are the principle food of all game fish in most waters.

Bait fish are the plankton feeding forage fish, such as minnows and shad. Bait fish can also be the young of game fish, such as crappies, bluegill, and bass.

Most bait fish concentrate within five feet of the surface where sunlight promotes the growth of the plankton on which they feed. One method of fishing is to use the ID-6300 to find the bait fish first. A school of bait fish will look like a "cloud" on the ID-6300's display. Usually, game fish will be nearby, often directly beneath the school of bait fish.

HOW TO OBTAIN SERVICE

If you have a problem with your sonar unit, please give us a chance to help before sending it in for repair.

Assistance can often be extended by telephone or letter. Call the Authorized Customer Service Center nearest to you. If there isn't a service center near you, call the factory customer service department at 1-800-331-2301, toll free. Oklahoma residents call 918-437-6881, collect.

Please detail the problem you are experiencing. The service department may be able to save you the inconvenience of returning your unit.

If the unit must be returned, pack it carefully so it won't be damaged. It is advisable to insure the unit in case it's lost or damaged during transit.

SCHEMATIC DIAGRAM AND PARTS LIST

If you desire a schematic and parts list for your Eagle sonar, send $1.00 to the address below and the information will be mailed to you promptly. Be sure to include the model and serial number of your Eagle sonar unit.

Mail to: EAGLE ELECTRONICS
Att. Service Department
12000 E. Skelly Drive
Tulsa, OK 74128-2486

KEYBOARD BASICS

SENSITIVITY These keys control the graph's sensitivity. (The digital automatically adjusts its sensitivity.) The receiver sensitivity has 32 steps, allowing adjustment over a wide range of conditions. The left arrow key decreases the sensitivity, the right arrow key increases it.

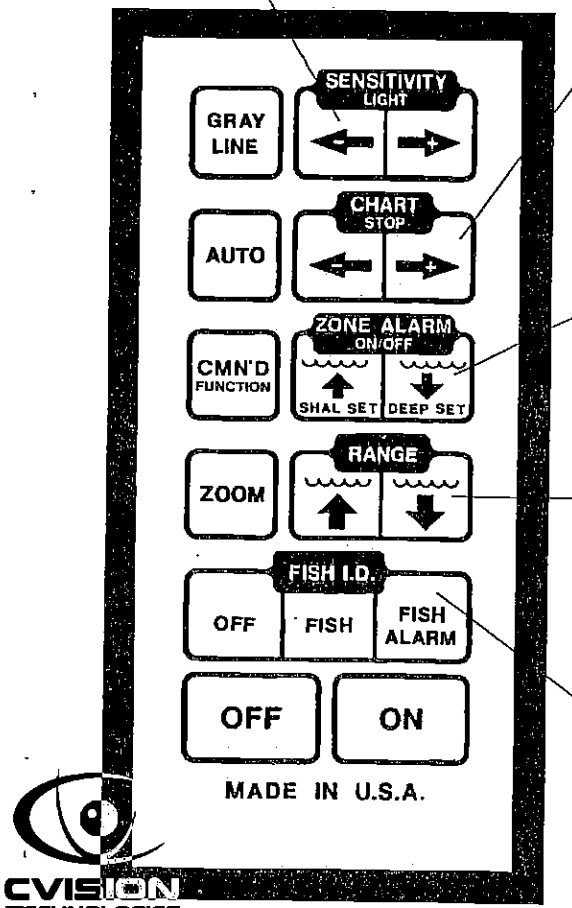


CHART The CHART group of keys controls the chart speed. The ID-6300 has 32 chart speeds, ranging from very slow to FAST. Pressing the FAST key speeds up the chart speed. The slow key reduces it. The STOP/RESUME key stops and restarts the chart display.

ZONE ALARM This group of keys controls the ID-6300's zone alarm. It's commonly used as a "fish alarm." A target (such as a fish or school of fish) will set off the alarm if it enters the alarm zone.

RANGE The arrow keys allow the selection of depth ranges. Press the up arrow to decrease the range depth. Press the down arrow to increase the range.

FISH I.D. These keys turn the "fish flash" and the fish alarm on or off.

CVISION TECHNOLOGIES

Note: The ID-6300 has many more features than the ones just discussed. For a detailed look at the ID-6300's features and operation instructions, read the Operation section of this manual.

KEYBOARD BASICS

This section gives a brief explanation of the keyboard. Read the Operation section for a detailed description of each key's operation.

GRAYLINE This key turns the GRAY-LINE function off and on.

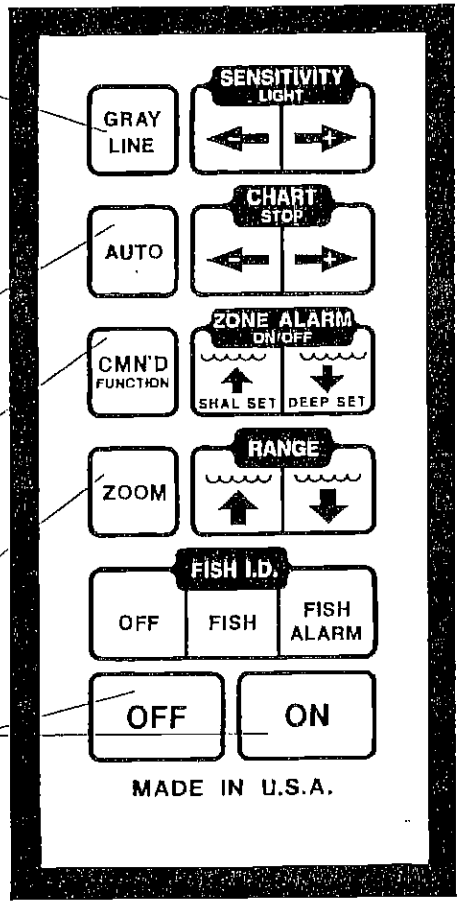
AUTO The AUTO key switches the ID-6300 in or out of the automatic mode. The ID-6300 automatically adjusts the sensitivity and range selection at power on. Pressing the AUTO key allows you to take control of the ID-6300, making manual adjustments as desired. When the ID-6300 is in the automatic mode, the word "AUTO" displays immediately below the sensitivity bar.

COMMAND FUNCTION The ID-6300 has "menus" of features that are accessed with this key.

ZOOM Targets on the display are enlarged to twice normal size or more with this key.

ON OFF These keys turn the ID-6300 on and off. To turn it on, simply press the ON key. To turn it off, press the OFF key.

Pressing any key generates a tone or "beep." This is the ID-6300's way of telling you that it has accepted a command.



SPECIFICATIONS

Dimensions	5 3/4"H x 8 3/16"W x 2 5/8"D
Weight	1 3/4 pounds
Transmitter	
Frequency	192 kHz
Output Power	500 watts peak to peak typical 63.5 watts RMS
Receiver Sensitivity	> 85 db temperature stabilized
Operating Current	200 ma (lights off) 500 ma (lights on)
Operating Voltage	10-15 vdc
Number of pixels	82 x 32 (vertical x horizontal) 2624 Total
Depth Capability	300'-500' typical (with 20 degree transducer) 500'-700' typical with 8 degree transducer)
Display Scroll Speed	.5" per minute (minimum) 32" per minute (maximum)

GLOSSARY

ANCHOR WATCH - A setting of the sonar unit's alarm. The alarm activates when the boat drifts into shallower or deeper water than the alarm set points.

BACK-LIGHTED - A display or keyboard illuminated from behind by a light. Back-lighted displays and keyboards are essential when night fishing or navigating.

CAVITATION - Air bubbles created by the high speed movement of a boat or transducer through water.

CHART SPEED - (1) The speed of the chart paper on a paper graph recorder. (2) The speed of an image across the screen of a liquid crystal graph. (Also called "scroll speed").

CONE ANGLE - Width of the transducer's cone of sound. Eagle has transducers with cone angles from 8 to 45 degrees to suit the varying needs of fishermen.

CRT - Abbreviation for Cathode Ray Tube. See Video Graph.

DEFINITION - The ability of a sonar unit's display to show detail. A high resolution display can show more detail than a low resolution one.

DISCRIMINATION - A feature that allows the sonar to eliminate noise and display only true target information. Discrimination on Eagle products cuts out false signals from other sonar, noise, thermoclines, and more.

FISH ALARM - An alarm that activates when a fish is detected.

FISH ARCH - A sonar with good resolution displays fish signals with an upside down "V" or arch. This distinguishes fish signals from other targets.

FLUSH MOUNT - A transom mount transducer that is installed with the bottom of the transducer flush with the bottom of the hull.

GIMBAL BRACKET - A bracket used to install a sonar unit permanently. The sonar unit can rotate in the bracket for the best viewing angle.

GRAYLINE - This function shows the relative strength of signals displayed on the screen. Signals weaker than the GRAYLINE setting are displayed in black, stronger targets are gray. It also gives clues to the compostition

NOISE

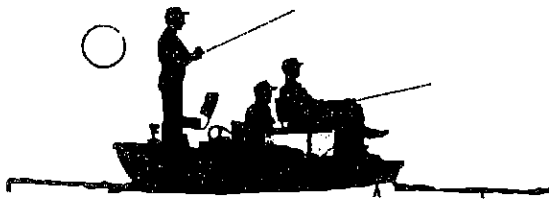
Minimize electrical noise by routing the power cable away from other possible sources of electrical interference. One of the largest noise generators is the engine's wiring harness that runs from the engine to the instrument panel. This harness usually contains a wire for the tachometer which radiates RF (radio frequency) energy. For best results, keep the power and transducer cables away from the engine wiring. Also, bilge pump wiring can sometimes radiate noise so try to keep the ID-6300's cables away from those wires.

VHF radio antenna cables radiate RF energy at higher power levels than even the engine's wiring harness. It is important to keep the ID-6300's power and transducer cables as far away as possible from VHF radio cables.

If interference begins at slow boat speeds, worsening as the boat speed increases, then a probable cause is acoustic noise, or cavitation. This noise is not electrical, but rather mechanically induced noise from the transducer. Stop the boat, put the engine in neutral, and increase the Rpm. If the noise does not increase on the display, then it is cavitation. Usually, air bubbles passing over the face of the transducer create acoustic noise. The faster a boat travels, the more air bubbles increase and generate noise on the display. To eliminate this problem, read the transducer owner's manual for proper mounting techniques.

TRANSDUCER

Installation instructions for the transducer are with the transducer in a separate package. Please read the instructions carefully before you install the transducer.

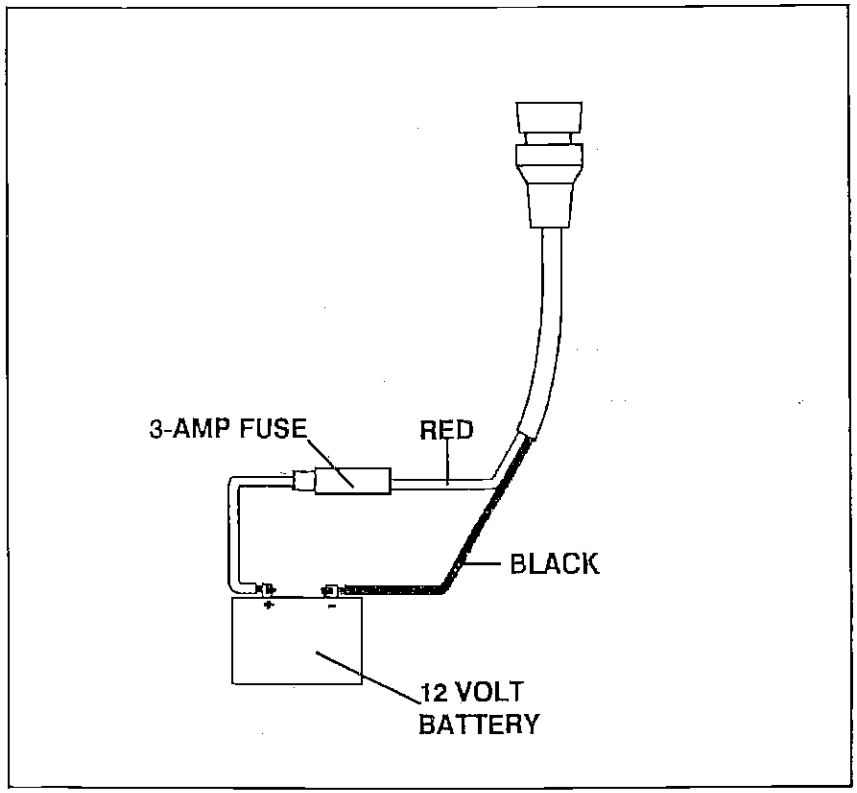


Power Connections

The ID-6300 operates from a 12 volt battery system. Attach the power cable to an accessory or power buss. If you have problems with electrical interference, then attach the cable directly to the battery. Electrical interference shows as random dots on the display whenever the boat's engine or an accessory is on.

The power cable has two wires, red is the positive lead and black is negative or ground. Attach the in-line fuse holder to the red wire on the power cable with the crimp connector. The other end of the fuse holder attaches to the battery or accessory buss. If the cable is not long enough, splice ordinary #18 gauge wire onto it. Be certain that the fuse holder is as close to the power source (battery or accessory buss) as possible. This protects the power cable and your ID-6300 in the event of a short. Use a 3-amp fuse.

The ID-6300 has reverse polarity protection. No damage will occur if the wires are reversed. (However, the unit will not work until the wires are attached correctly.)



of the bottom. In other words, you can tell if the bottom is soft or hard. A hard bottom returns a strong signal causing a wide gray line. A soft, muddy or weedy bottom returns a weaker signal which is emphasized with a narrow gray line.

IN-DASH - A sonar unit installed through a hole in the boat's dash. Usually, the face of the sonar is flush or nearly so with the dash.

kHz - Kilohertz. A measurement of frequency. Your Eagle sonar operates at 192 Kilohertz. (192,000 cycles per second).

LCD - Liquid crystal display. The screen or display of a Liquid Crystal Graph sonar instrument.

LCG - Liquid Crystal Graph.

NOISE - Any undesired signal. Electrical noise is caused by engine ignitions systems, radios, etc. Acoustic noise is caused by the vibration of the engine or other mechanical sources. It appears on the display as random dots or lines.

OPERATING FREQUENCY - Frequency that the sonar unit's transmitter and receiver are tuned to.

OUTPUT POWER - The amplitude of electrical energy transmitted from the sonar unit to the transducer. Measured in watts, the higher the output power, the deeper a sonar unit can read, and more detail can be displayed.

PEAK-TO-PEAK - A measurement of the transmitter's power output.

PIXEL - The small dots or squares on a liquid crystal display or CRT.

PIXEL DENSITY - The number of pixels per square inch on a liquid crystal display. The best resolution is obtained when a high number of pixels are in the vertical.

PULSE LENGTH - The amount of time that the sonar transmits. This is measured in micro-seconds. The shorter the pulse length, the better the resolution. For example, a 30 micro-second pulse length is equal to a one inch resolution.

RANGE - The section of water shown on the sonar display. For example, a 60 foot range has zero for the upper limit and 60 for the lower limit.

REMOTE - An intelligent "repeater" unit that receives depth information from another sonar unit. A remote doesn't have a transmitter or receiver. However, it does have it's own features that are adjustable and operate separately from the master.

RESOLUTION - The ability of a sonar unit to separate targets from each other or the bottom.

RMS - A standard rating of transmitter power output.

SCALE - The markings on a sonar unit's display. To determine the depth of a target, simply compare the target's location to the location of the scale markers on the display.

SECOND ECHO - Another echo that registers at roughly twice the depth of a target echo. This is caused by the sound waves reflecting off the bottom, striking the surface of the water, travelling to the bottom again, and returing to the surface.

SECOND FUNCTION KEY - A button that converts the functions of the primary keys on the keyboard. Sonar units with a second function key have other keys with two functions. You can switch functions with the second function key.

SENSITIVITY - The ability of a sonar unit's receiver to display targets. Increasing the sensitivity allows weaker targets to be displayed. Also called "gain".

SCROLL SPEED - See CHART SPEED.

SHOOT-THROUGH-HULL - A transducer installation which allows the sonar signals to pass through a fiberglass hull without cutting a hole in the hull.

SUPPRESSION - A method used in some sonar units to eliminate interference or noise.

SURFACE CLARITY CONTROL - Reduces or eliminates undesirable signals displayed near the water's surface. Also called "SCC".

THERMOCLINE - A layer of water caused by the meeting of warm and cool layers of water. The thermocline provides the temperature most fish prefer.

TRANSDUCER - The element of a sonar system that converts the electrical

INTRODUCTION

When the ID-6300 Liquid Crystal Graph (LCG) is turned on, it will automatically find and display the bottom signal and other targets. As the bottom depth changes, the ID-6300 will automatically change the range and sensitivity to keep the bottom signal on the display. If desired, the only key that needs to be touched is the **ON** key. However, disabling the automatic mode allows manual adjustment of the ID-6300.

The ID-6300 Is nitrogen filled and sealed for complete waterproof protection. The liquid crystal display and keyboard are backlighted for easy use at night. Plus, it's covered by a full one year warranty. This includes all parts and labor for one year from the date of purchase.

To get started with your ID-6300, first read the installation section. This Is where it all begins, and improper installation can cause problems down the road. After you've read these instructions and installed your ID-6300, read the rest of this manual in detail. The more you know when you get to the water, the more your ID-6300 will do for you.

INSTALLATION

Mounting

Install the ID-6300 in any convenient location, provided there is clearance when tilted for the best viewing angle. Holes in the bracket base allow wood screw or through bolt mounting. Attach the bracket to aluminum panels with sheet metal screws. Place a piece of plywood on the back of thin fiberglass panels to secure the mounting hardware. Make certain there is enough room behind the unit to attach the power and transducer cables.

You can route the power and transducer cables through the 7/8" hole in the base of the gimbal bracket. Then pass them through a hole in the mounting surface. The smallest hole that will pass one connector through is 3/4". Pass the transducer connector and cable up through the hole and gimbal bracket. Then push the power cable wire down through the bracket and dash. After routing the cables, fill the hole with silicone rubber adhesive (RTV). Offset the bracket to cover the majority of the hole.

TABLE OF CONTENTS

energy from the transmitter into ultrasonic sound waves. When a return echo strikes the transducer, it converts the sound waves into electrical energy which is received and displayed by the sonar unit.

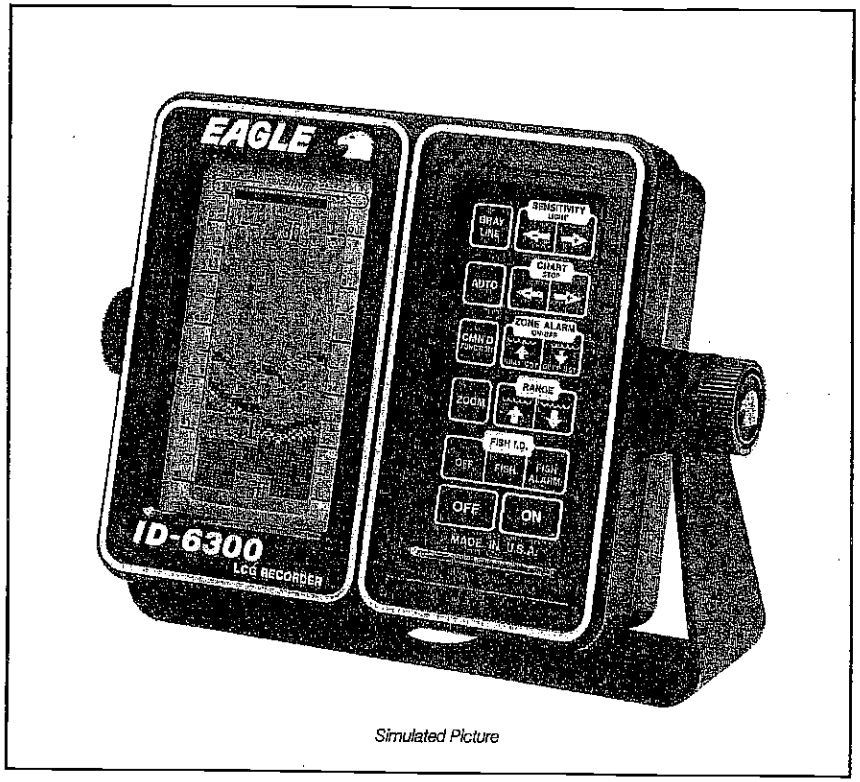
TRANSOM MOUNT - A method of mounting transducers or other sensors on the transom of the boat.

UPPER/LOWER LIMIT - These are the range limits displayed on the sonar screen or paper. The upper limit is shown at the top of the display, while the lower limit is at the bottom. For example, a 20 to 30 foot range has 20 feet as the upper limit and 30 feet as the lower limit.

VIDEO GRAPH - A sonar unit that uses a CRT or television type display.

WINDOW - A segment of the depth range. For example, an upper limit of 20 feet and a lower limit of 50 feet creates a 30 foot window.

ZOOM - A feature that enlarges targets on the display.



Simulated Picture

ID-6300

LIQUID CRYSTAL GRAPH

INSTALLATION AND OPERATION MANUAL

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