

## Sea-scanning sonar

Research and development chief, Gene Hill, has designed a commercial fishing sonar that his company, Scannar Industries of Cornwall, Ontario, calls a world-beater.

Scannar's MAQ (multiple aperture) sonar can detect fish up to 6 400 metres in any direction from the fishing boat. The schools of fish are pinpointed in vivid blue on a green video screen. At the same time, the lower section of the screen displays a vertical cross-section showing the school's depth.

"Our fishing sonar is the most technologically advanced in the world," Hill boasts. "We have both a horizontal and vertical display. The competition shows only the horizontal. The others can't tell how big a school is because they don't have the vertical."

Scannar introduced an advanced MAQ II model with simplified controls ("the difference between automatic transmission and stick shift in a car") at the Seattle Fish Expo '83 last year.

"The response from that model was tremendous," says David Rupprecht, Scannar's vice-president of marketing. "We're aiming at the Far East, South American and African markets. And there are hopeful signs we'll get into the Japanese market."

### More advanced model

The Cornwall firm is now working on an even more advanced model, the Multi-MAQ, with longer range and higher resolution. It is aimed at the military, scientific and petroleum markets. If a machine can be built that can



Scannar Industries' plant in Cornwall, Ontario.

detect a single herring one kilometre away, then one can be designed that can "winkle out submarines and even a torpedo coming at you," Hill says.

Gene Hill, has used his experience in radar and fire control systems with the Canadian Air Force to design the MAQ sonar. The MAQ is a simplified version of the naval submarine-hunting sonar.

Hill developed the original MAQ model five years ago. Before the 1981-82 recession, 70 MAQs were sold in a dozen countries.

The company, which had devoted more effort to refining its product than to sales and service, went into receivership. After restructuring, Scannar went back into operation last September and, in the first month, sold three MAQ models.

The new Scannar plans to be more ag-

gressive by sending sales teams around the world and displaying the MAQ II in Norway, Iceland and Scotland.

Only five companies in the world manufacture omni-directional commercial fishing sonar — two in Canada (both of them in Cornwall) and the others in Japan, Norway and West Germany.

The MAQ and MAQ II models range from 15 to 90 kiloHerz (the lower the kHz the longer the range but with less resolution) and sell for from \$60 000 to \$150 000 (US).

### Any world voltage

They can run on any world voltage from 90 to 250 volts and are immune to ship-board electrical interference because the information from the transducer (a periscope in reverse) is transmitted by light signals rather than wires. The military-derived optical isolators are unique in the commercial fishing world.

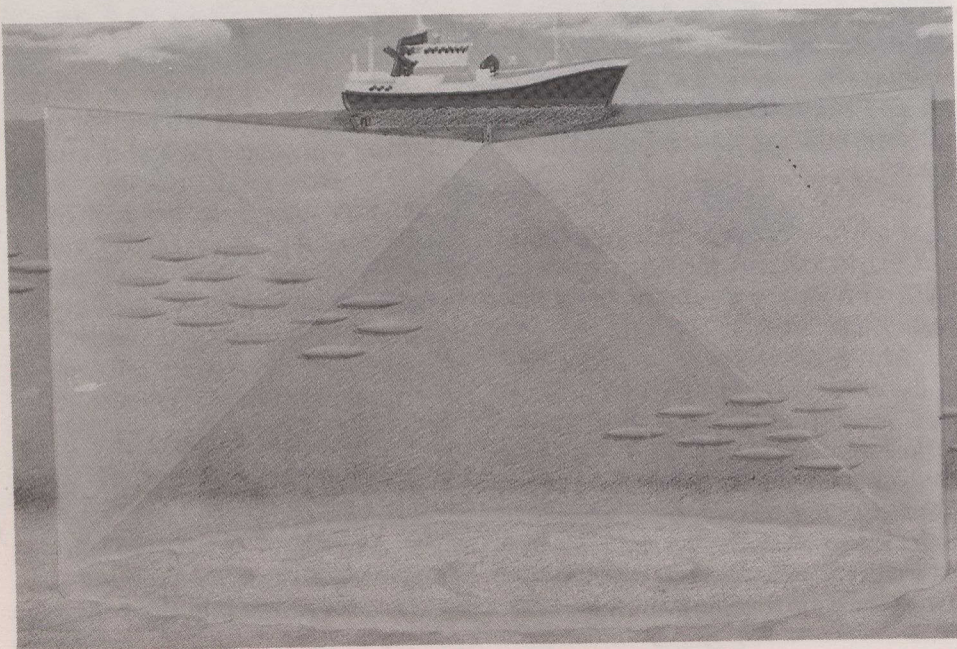
The processing time to take and send an underwater "snapshot" to the display screen is one two-thousandth of a second, four times faster than competitive models. That is important in rough seas and rocky waters.

The heart of the machine is a Hill-designed computer that operates in the MAQ II at 40 MOPS (mega operations per second) or one forty-millionth of a second — 200 times faster than most micro-computers.

Hill, with his wide-ranging mind, is constantly exploring new ideas. One is a sonar plug for sports fishermen — cast it out and it would send back up the line to the reel information on any fish in the vicinity.

For now, Hill is devoting his talents to keeping even farther ahead of the competition by developing the new Multi-MAQ. "We're out to show that little Cornwall can take on the world."

(Article from Canada Commerce.)



Schematic drawing showing the scope of Scannar's MAQ Sonar.