



A GSI MARINE OPERATIONS PUBLICATION

1979 Outlook for Marine Exploration

By **ERIC JONES**
Manager, Marine Exploration

1978 Revisited

In the first issue of the *Seismic Mariner News* in 1978, we looked at 1977 and took particular note of the healthy trend of profits going into '78. I am pleased to report that this trend was sustained. Business volume increased nearly 50% over 1977, and profits more than doubled. This was done with the addition of only one vessel to the fleet and a few new TIMAP* systems appropriately placed around the world, so the major conclusion one can reach is that you folks did a tremendous job in using (and improving) our assets and working more productively. You have read, by now, the article about Marine's new Buddha. I just want to

say that I share it with all of you — it is a recognition from TI of the accomplishments of the Mariners.

We continued the outstanding growth in 3D technology and business with achievement of our sales entered goal for the year. We go into 1979 with a solid 3D backlog, contained within a record total backlog. New areas for 3D include Mexico and Brazil.

We made good progress on our people programs with much resources devoted to training and career development and some significant course upgrades — particularly for CMS** operators. Even though the integrated crew and 2 and 1 programs are not institutionalized totally yet, by continuing to hire, train, and schedule our people

*TI Trademark
**GSI Trademark

Continued on Page 2

New Source System Gets Rugged Test in North Sea

By **JACK THOMSON**

The life of an engineering test program is like no other. Its purpose is, at the same time, well defined as to what you want and somewhat fuzzy as to what you get. The recent "Economical Source" test program on the M/V *Jonsson* is illustrative.

The Eco Source was defined, early in 1978, as a source system which could replace GSI's large airgun arrays with fewer but larger and more efficient airguns in one string and use a second string to provide a completely redundant backup within the same deck space now used.

Late in 1977, a new airgun design was being formulated by Harry Harrison based on theoretical work by Roy Johnston. Confidence in the

design was substantiated by a series of tests off the California Coast in mid-1977 by an engineering group composed of Harry, Roy, Marvin Bays, Jack Hawkins, and Leland Tschurr. Test results were promising so a complete set of guns was started in TI fab shops.

PHOTOS By **LYNN HEITMAN**
and **LORTON TRENT**

In the meantime, more exhaustive test plans were formed. Several crews and site locations were considered and the *Jonsson* was finally selected. Although the test site location was shifted several times, it narrowed to a North Sea location in October. Eventually, our problem was getting to the end of the collection season. As

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GSI PROCESSING SERVICES

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Vol. 3, No. 2
February, 1979

Last Chance to Vote For Best Story of Year

Here's your last chance to vote for the 1978 *Seismic Mariner News* Story of the Year. We are extending the contest deadline till March 1 to give readers a few more days in which to participate. Vote for your favorite article by sending in one of the ballot forms enclosed with the December and January issues. Writer of the article receiving the most votes will get a \$50 cash award.



Checking the new airgun handling system are (clockwise from lower left) Harry Harrison (back to camera), Jack Hawkins, Angelo Raitano, Eugene Brincat, Jack Thomson, Jack Smallwood, Robbie Munday, and Leland Tschurr.

Outlook

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we are closing in on the benefits of these programs.

On the asset side, the safety program (TISOS) has been the most satisfying, with equipment installed on all vessels except the *Arctic Seal* and *Jonsson*. These will be outfitted before the North Sea season. Best results were the total absence of major mishaps.

The inventory control system was installed and received good reviews. The shortened arrays in East Canada and North Sea performed exceptionally well and helped you achieve production in those areas.

The processing centers made real headway in 1978 with the TISIS* software system giving the expected lift, and new products — particularly wavelet processing — adding to the outstanding performance for the year. ADL represents a joint collection/processing program that was tested and installed in 1978. It will yield real payoff in 1979.

We should not stop in a review of the year without noting the progress in communications. The *Mariner News*, I thought, was at its best, and good response to the reader survey will help it get even better. MARISAT sure made its presence felt, and we have programs to make it even more useful in 1979.

P&AE programs helped us in many ways, with the processing centers in Bedford and Singapore leading the way and the combined program efforts of the *Jonsson* and Engineering showing us how it can work on the collection side.

We still have our disappointments — probably one of the main ones being the failure to achieve the total

impact of some of our people programs, such as having all of our people able to plan and depend on their 2 + 1 schedule. We also lost a few key jobs during the year — some of which we should have won with better planning and execution.

We still have a lot to do and a lot of improving room in all phases of our business!

Individual Plaudits

The year saw 6 vessels achieve vessel of the month status at least once; a couple of vessels consistently fell just behind the winner each month although they never won. The *McDermott* and *Arctic Seal* each won three or more times, and the *Carib Seal* needs special note for her consistent performance.

The processing folks in Bedford really came on strong in sales, technology fanout, productivity, and profits. Australia Exploration takes the prize as the top P&L performer in 1978. Further notes need to be made of the *Jonsson* and *Dunlap* for their help in the fleet's future with their excellent cooperative program on Engineering test programs and the *Explorer* and *Carino* for their design help on the Eco Source system.

1979 Priorities

1. Training/Career Development

Our number one priority in 1978 remains number one in 1979. You need to reread the state-of-the-fleet message of last year because that still holds. The most significant factor comes with the addition of vessels to the fleet, the growth in volume due to good performance and a healthy market and resultant promotions — elevation of 4 boat managers to new jobs, 6 new boat managers, and 8 new party managers since this time last year, for example. We have got to keep pushing on career advancement across Marine; I am committed to it.

2. People Programs

I do not know what else to call this priority. What I mean is to provide job satisfaction for the majority of our people by understanding and planning for needs — individual as well as company. One of the problems in achieving full fleet-wide 2 + 1 is the failure to recognize total people requirements. We must hire, train, and move people to allow the planning and adherence to personnel schedules. We must also listen to the signals from the People Effectiveness Survey (PES) and change or implement policies and programs as

required to further Marine morale and job satisfaction.

3. Continued Model Financial Performance

This is an essential. By being profitable, we can afford to invest to grow and lead the industry. This provides the opportunity for you to grow — careerwise and monetarily. Your resultant enhanced performance allows us to further grow profits and the positive feedback loop takes off. We saw it in 1978; we will see it again in 1979.

4. 3D Expansion

We've got a solid lead in 3D and a proven production product — collection and processing. The SEG papers reviewed earlier showed that. We must capitalize on the lead in 1979. The oil companies are recognizing the utility of 3D — the opportunity is here.

5. Safety

Most of the vessels are totally with the program. A few still lack the leadership and crew emphasis. This will be changed in 1979. Our goal must be to beat our safety goal levels and, again, have zero major accidents.

6. P&AE

Continued productivity gains are required, particularly in light of increasing inflation pressures. In a highly competitive environment, productivity is what can separate the winners from the losers and can mean the difference in capturing major bids. The ideas for increasing people and asset effectiveness come from you. We must continue to push idea development and fanout.

7. New Generation Systems

We will devote major resources to the development of the systems of the 80's to address expected client requirements. We will be asking your help in developing and proving pieces of the system.

Outlook

In summary, the outlook for 1979 is even brighter than the results for 1978. We came off a solid year with good backlog and with increased and upgraded capacity and a sense of unity. I believe a year from now we will look back and see 1979 as better than 1978, with significant progress toward our priorities.

Many thanks to you for your hard work and commitment to achievement in 1978. May our individual and collective goals be accomplished in 1979. I hope to see most of you in center and vessel visits during the year.

GSI Seismic Mariner News

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New Source

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October slipped to November, force 5 seas grew to force 8 or 9.

We, in Engineering, were overjoyed at the prospect of getting a really rugged test of the equipment. I say "equipment" because by now the test of a new airgun had grown to include the evaluation of a new handling system concept, a new solenoid, a new electrical line design, an underwater buoyancy system, an array depth monitoring system, a new streamer live group design, a streamer offset sensor (SOS) section, and wideband MARISAT data transmission experiments.

Lorton Trent had already made several trips to confer with crew members and had constructed a model of the handling system. Through these conferences and discussions, the final configuration was chosen and drawings made. Early phases of the handling system job were started in Middlesbrough under the direction of *Jonsson* personnel. Preliminary fab of the handling system was done in Middlesbrough.

In Dallas, Mike Kao, Larry Sullivan, Mike Lo, Wayne Johnston, and Jack Boyles worked on the electrical and firing lines, depth monitor unit, and flow noise streamer array. Lynn Heitman was active in coordinating the MARISAT equipment procurement and test plans.

Meanwhile, the *Jonsson* was down to a final 200 km. After several weeks of waiting out the worsening weather, this job eventually had to be foregone, so the vessel was now available for our test. Lorton Trent and Jack Boyles were sent ahead to complete shore work and arrange early rig up of the handling system. They were followed by Harry Harrison and Jack Hawkins, who,



M/V J. E. Jonsson ready to begin test in fjord.

with able assistance from Pete Dean and Middlesbrough warehouse personnel, started other equipment readiness. Lynn Heitman, Roy Johnston, Leland Tschurr, and myself rounded out the Dallas team.

By the 17th, all rigging was complete and the gun crew of Angelo Raitano, Jack Smallwood, Robbie Munday, and John Lewis provided much needed assistance and experienced advice. The *Jonsson* sailed for Alesund, Norway, for the weather protection of a fjord to do the pulse signature testing. The crossing, while at sea state 5 or so, was calm compared to that coming. The MARISAT transmission test, started in Middlesbrough, continued on the way across under Comsat General engineers Tom Calvit and Eli Wachsberg, with very satisfactory results.

(To Be Continued Next Month)



Jeff Cunkelman leans right to maintain his balance as the ship rolls to left in rough sea.

Dallas Cowboy Football Mania

The test aboard the *Jonsson* was conducted at a very interesting point in the Dallas Cowboy football season. There were plenty of Cowboy supporters always available in the galley area where the videotape machine is located. Every game tape on board traversed the video machine at least once in the first few days after leaving port.

Among the viewing audience there were two loyal Washington Redskins football team supporters — visiting COMSAT engineers Tom Calvit and Eli Wachsberg. Since Washington had beaten Dallas in a game played earlier in the season in D.C., there was a lot of speculation aboard as to



Leland Tschurr and Roy Johnston with electronics for far field measurements system used for pulse test.

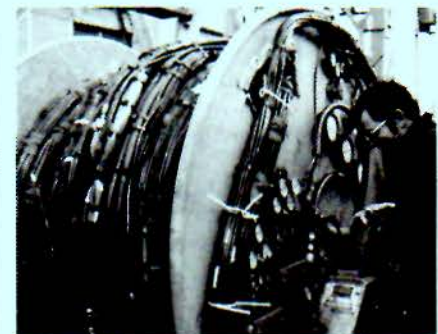
who would win the upcoming game on Thanksgiving Day.

As Thanksgiving grew closer, these Skins fans increased the frequency of viewing the tape of the earlier game to as often as twice per day. On the day of the game, they played it almost continuously with the expectation that somehow this game would turn out the same as the one on the tape. A football pool abounded with almost universal participation aboard the ship.

The final outcome was available via satellite from a curious and helpful MARISAT operator. The scores by quarter were finally provided from Dallas about four days later, and the pot was divided.

Wouldn't you know, the big winner was Eli Wachsberg, and he had departed the ship at Alesund, Norway. Cowboy fans at least took pleasure in the fact that Eli's win was made possible by the loss of his team, the Redskins, to Dallas by a score of 37 to 10.

— LYNN HEITMAN



Lorton Trent inspects new electrical line configuration.



M/V Green in port at Progreso.

Culinary Shock Is Inflicted During Test

During the recent Economical Source test on the *Jonsson*, there was an abundance of native and transplanted Texans aboard. These cowboys from the range near Dallas quickly began to miss their native "Texas grub" and eventually coerced the cook to prepare some down home 3-alarm chili using a packet of authentic spices imported direct to the ship from Texas by Lorton Trent.

The pot boiled ominously on the stove just before the evening meal and emitted a strange smell throughout the galley. Eventually, a crowd of enthusiastic chili consumers gathered at tables near the point where entree selection was made. Innumerable techniques were used to convince hesitant potential partakers to try a dab on their plate. Those that did were then carefully watched after initial consumption to determine their reactions.

Generally, the reaction noted was initially a pleasant smile followed by a grimace, a gulp, and rapid consumption of all available liquids. I'm sure there were a few secondary reactions later in the evening, particularly in the cheering group that consumed well beyond the prudent limit for the prevailing weather and sea state conditions.

— LYNN HEITMAN

Field Service Bulletins

79-1 Patching PU Cold Water Skin

Anyone missing this or any previous FSBs should write to Marine Engineering, MS 904, Dallas.

M/V Green Cruises In Sunny Mexico

By RON PISARIK

As the new year gets underway, the M/V *Cecil H. Green* is continuing its extensive 3D job in the Gulf of Campeche in Mexico.

The town of Progreso on the tip of the Yucatan Peninsula is our closest port, and if it weren't for the mile-long pier, the town would be a lot closer. Progreso (which is more popularly referred to by the crew as "Regreso") can best be described as a sleepy little Mexican town which ceases to have any sort of night life after 9 p.m.

Luckily, the city of Merida is only a 9-peso bus ride away for those of us who want a little more excitement. Merida, by the way, is also the hangout for our people on the beach — George Sellers, Jim Markham, and Charlie Blalock.

PHOTOS By JOHN GAMMON

Relief party manager Paul Woodward has been keeping a sharp eye out for shrimpers to make sure they don't catch a cable in their nets. Bob Elliott, Dale Carpenter, Ron Pisarik, Gary Dillon, and Tim Becker are keeping the doghouse in smooth running order. Bob and Gary are a little overdue for some time off, and they are anxiously awaiting the return of Speedy Neighbors and Scott Plotkin, who are now on time off. Tim has just joined the *Green* from the M/V *Arctic Explorer*, which has been working in Canada, while Dale is back with us after being off for a few months due to a motorcycle accident.

Ben Brooks and Jim Grady have been in Dallas attending a CMS II school and should be back soon. Hopefully, they will have learned enough to provide a little relief for our current CMS operators, Jim O'Connell and Rich Read. Bob Thomas has also been riding the boat as part of a navigational support group to try and iron out a few of the problems that occur with the gathering of 3D data.

We just installed a new firing line for our airgun array, as the old one was nothing but a long string of airhose connections and old solder joints. To make sure everything stays in working order, we have source engineers Bill Kennedy, Gene Chapman, Brian Kirby, and Jerry Skolnick. Tom Verner and Ray Plummer are on leave right now while



"Mucho problemas," observes Jim Acker, as he and John (the Loon) McNeil trace difficulty in fathometer interface. (They fixed it shortly.)

Dennis Bible is attending PB-44 school in Houston.

To make sure no one gets too skinny around here, Chef Bennett has been cooking up some great dishes. The chef, assisted by Jeff Johnson and Jorge Acosta, prepared a huge Thanksgiving meal which included turkey, roast beef, pork, and lobster, plus all the trimmings.

And finally, we have our boat crew to get us where we want to go. Captain Ed Norris at the helm is assisted by mates Paul Le Maire and Tom Murphy, while Harry Secondine and Joe Healy keep the engines running (most of the time, anyway). Steve Hill, the AB, makes sure we have the cleanest decks of any boat in the whole gulf.

Presently, we are about a third done with the prospect. So it looks as though we will be spending the Holidays (Christmas, New Years, Easter, and probably the 4th of July) down here in sunny Mexico.

Boyce Taylor Assumes Systems/Safety Duties

Boyce Taylor has been promoted to GSI Marine systems/safety coordinator, reporting to Jack Lane, and will be writing the Safety at Work column in the *Seismic Mariner News*. Future field safety reports should be sent to Boyce at MS 988 in Dallas.

Boyce will also be concerned with Marine systems documentation and will serve in an interface capacity between Marine Engineering and Operations.

Middlesbrough — Hub of GSI North Sea Operations

For 15 years — ever since the North Sea became a hotbed of oil exploration activity — Middlesbrough, Yorkshire, England, has been hub of GSI operations in the area. This is the first part of a series on GSI history in the North Sea and the key role Middlesbrough continues to play. The author is manager of the GSI Middlesbrough warehouse.

By **FRANK WEST**

Middlesbrough warehouse is perhaps misnamed now, as the present facility lies in Stockton-on-Tees, on the opposite bank of the River Tees and about 2 miles further upstream than Middlesbrough.

Set in the middle of the industrial area known as Teeside, Middlesbrough is not the most exotic sounding of places, but it is home to many GSIs across the world or their wives. To the vessels of EAME, it is the home port. The town is situated 12 miles from the mouth of the river, but the port itself consists of Tees Dock at the mouth of the river and Middlesbrough Dock in the centre of the old town. It was here that GSI decided to make their centre of operations for the North Sea.

Why Middlesbrough, you might well ask. At that time (1963) Middlesbrough Dock was very quiet business-wise, and the port authority was glad to welcome the vessels. Also, Middlesbrough was one of the few North Sea ports willing to handle the explosives used at that time as the seismic source.

The administration department moved into the agent's offices in Marton Road, conveniently next door to the Star and Garter Hotel, which rapidly became well known to many GSIs joining and leaving the ships. The North Sea was now starting to boom, and the number of ships requiring cables and cable repairs gave birth to the GSI Middlesbrough cable factory in an upstairs warehouse beside the famous Transporter Bridge.

In 1964, the number of vessels coming into port and sailing increased, and with it the problem of handling the necessary supplies and clearance of customs for those supplies. It was then decided that a warehouse was a necessity.

At that time, GSI had a small warehouse in Den Helder, Holland, but this had many problems with customs officials, and it was practically impossible to take goods out from Friday evening to Monday morning. This was most disadvantageous to GSI, for, as everyone

knows, that is the time that our ships come into port.

So, in July 1964, Middlesbrough warehouse opened its doors for business in part of a small building on Dents Wharf under the able direction of Cec Vogan and the first employee, typist/secretary Margaret Hassack. Margaret later left to marry Terry Denning, now working in the Bedford processing centre.

The warehouse went into hibernation for the winter at the end of the 1964 season and then began to prepare for the start of the new season. In preparation for this, Cec Vogan in February 1965 hired two joiners/carpenters, John Hornsby and Allan Cowan, for the vital outfitting work. John is still on the warehouse staff, and many vessels — past and present — bear witness to his good work over the years. Allan decided to go for administration and served with the warehouse until 1971 when the wandering urge finally took him into the field as an administrator.

In the spring of 1965, business was really booming, so the warehouse took in the space next door, doubling its size. I was hired as assistant to Cec Vogan, extra staff were employed, and a truck was obtained.

It was soon apparent that all this expansion was really necessary, for into port every few days came either the *M/V Texin*, *Sonic II*, *Kyle Anne*, *Anna*, *Bella*, *Havbraut*, *Sorfold*, or *Regency* for supplies. With them came many well-known names — Bubba Hart, Roscoe Newton, J. O. Quisenberry, John Johansen, Bob Hart, Bob Stair, Nevoy Norem, Bob Radebaugh, and Ace Forgay.

The warehouse was now working flat out handling shipments from Dallas for the mobilization, which included the first 9000 DFS* system, reels for handling firing lines and main reels. We also handled customs clearance on and off the ships as well as local purchases. At the same time, progress was being made in getting local manufacturers to make materials we needed in large quantities, such as cable skin, streamer floats, signal wire, firing lines, etc.

From September on, the *Kyle Anne* and *Texin* departed for Africa, the



M/V Texin loading powder at Middlesbrough Dock during 1964.

Sorfold to Venezuela, and all other vessels except the *Havbraut* were demobilized. The *Havbraut* worked into the winter and sailed for her final job on Christmas Day 1965, something never equalled since in the North Sea.

During this period, GSI in Den Helder owed much to the help of Mrs. Willi Starrenburg, who to this day still rallies round with invaluable help whenever a North Sea ship operates from Den Helder or assistance is required in obtaining materials such as Shell Sol T in times of shortage.

In the autumn of 1965, the warehouse also had to find accommodation for a research and development group under Cal Kershaw and Dave Layson, which in turn grew, hiring more people. Jim Walker was one of those hired. After many changes, Jim came into the office in August 1973 and since that time has been responsible for the warehouse accounts.

Ca\$h for Photo\$

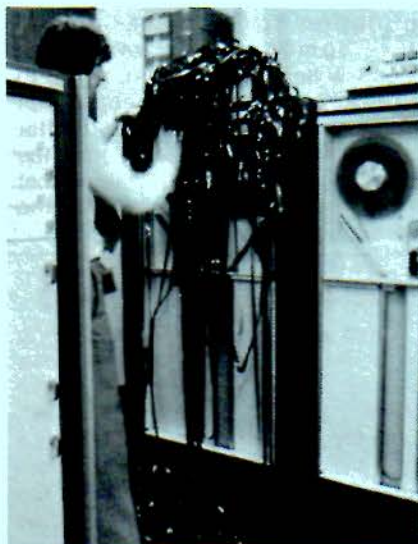
Cash awards for photos appearing in the January *Seismic Mariner News* are en route to Stuart Bell, Steve Myden, and Ian Baxter. We pay \$25 cash for photos appearing on page 1 and \$15 each for pictures used on other pages. We're always in the market for good photos, so send us some shots of the people and action on your ship or in your processing center.



Jaja Koci with TIMAP 356.



Kim McMahon at new IBM 129/3 card punch.



Peter Scott somewhere down the learning curve of tape mounting.

Market 'Down Under' Is Looking Up

By **BILL PAILTHORPE**
Sydney Office

The seismic market in Australia has expanded exponentially since 1976, with new acreage being released for exploration as well as older permits being released to hopeful oil companies. The Exmouth Plateau, where GSI did a 9,000 km spec survey (or group shoot) in 1976, is the major new area. This plateau has been described as the "world's last chance for a major oil field."

The result has been that GSI Australia now has 3 TIMAP units in Perth and 3 TIMAP systems with a TIDAR* display in Sydney. The M/V McDermott has been shooting in Australian waters since July '77 and a new boat, the M/V Karunda, is being constructed in Singapore for use as an Aussie flag vessel.

PHOTOS By **JOHN THORNTON**
and **PETER SCOTT**

The story here really concerns the Sydney center which grew from a one TIMAP unit, 19-people level in December 1977 to today's level of over 50 people. This expansion took a fair bit of planning and training along with a big dose of cooperation from new hires and old timers alike.

Computer operations in 1977 operated on a 5-day week, 3-shift basis. So we only needed three operators, one maintenance engineer, and one keypunch operator. Today we run 7 days/week, 3

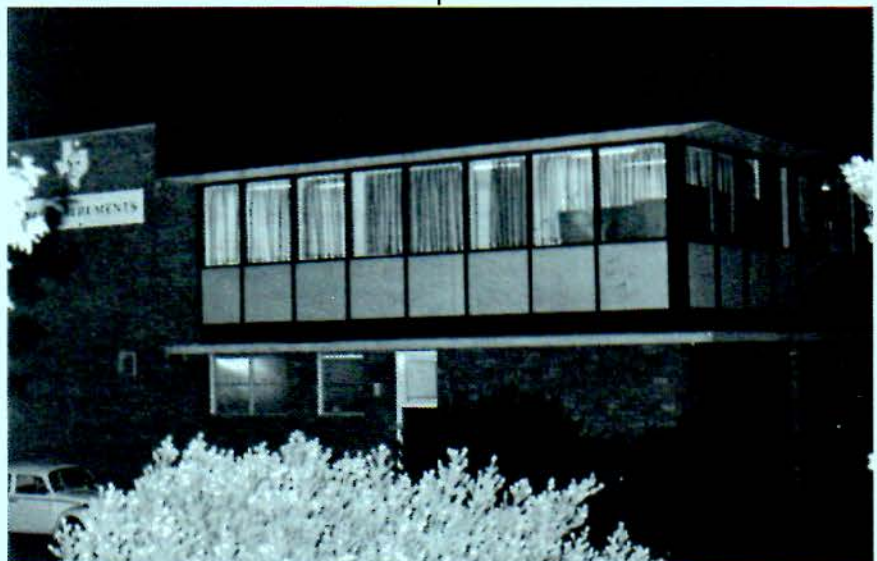
shifts/day on all four machines. This configuration needs some adjustment in thinking. Bryan Robertson, our operations manager, heads up this group. The photographs here show some of the operations group.

Of course, we didn't do all the installation by ourselves, we had just a little help. Ron Stanberry came over from Dallas, David Teh and William Tan came down from Singapore, along with Dariel Sewell, to install our TIDAR II system. Lee Weng Seong came down from Singapore recently to give maintenance cover while our own Ross Cowan-Lunn went to Dallas for a course.

On the operating scene, Anthony Choo from Singapore swapped with Peter Austin from Sydney so that Peter and Anthony could see how other centers operated. While down here, Anthony organized some formal lectures for our new operators.

GSI (or SSD) shares a building in North Ryde with TI's other divisions — Calculators, Semiconductors, Digital Systems, and Control Products. These other divisions function as sales and service outlets, with manufacturing being done elsewhere. All divisions are growing faster than planned, so Ken Reed, our facilities manager, is looking for new, larger premises nearby. Much of Ken's time is involved with moving walls around and looking at modular furniture to try and seat the expanding numbers.

Two of our land people, John



Home of Texas Instruments, Sydney, at 9 Byfield St., North Ryde.



Ross Cowan-Lunn, Rick Pain, and Ted Hulbert — Sydney's maintenance nucleus.

Thornton and Ross Beattie, have just taken 2-year contracts in Jakarta where GSI is setting up yet another service center. To help Sydney over this experience loss, Singapore has loaned us Tay Geok Soo and Florence See for a few months while we get our new hires trained up and orientated to GSI's way of thinking.

The year 1979 looks like being even bigger than '78. Apart from the



Ben Golafshan and Sema Davis at TIMAP 339.

routine contract work, GSI is organizing another spec survey off Queensland's Barrier Reef. A total of 15,000 km of data will be shot, processed, and interpreted, along with gravity and magnetics data. The success of this spec shoot will require a worldwide marketing effort and the coordination of GSI's Far East processing capacity and interpretation skills.

Simrad Reps Teach Operation & Repair Of Echo Sounder

By TIM HASCHKE

Representatives of Simrad A.S. conducted a 3-day training course for GSI in Dallas December 13-15 on the operation and repair of the Simrad EA Echo Sounder.

This new digital unit for measuring was chosen as a standard for the GSI fleet in early 1978, and the majority of all boats will have these systems on board during the 1979 season.

The school was presented by Finn Kristensen of Horten, Norway, assisted by Trond Ulven and Walter Perlowski of Simrad's New York office. Attending were participants of the CMS II school then going on in Dallas as well as several Dallas engineers and field service personnel from both Dallas and the U.K.

The school was designed to provide participants with a general knowledge of system operation and the ability to correct and repair problems with nonfunctional units. Morning sessions consisted of lectures on basic theory of operation and discussions of possible trouble symptoms and probable causes. During afternoon sessions, participants were given "hands-on" experience while attempting to find and correct faults introduced by Simrad personnel in two Simrad EA units which were on display during the school.

The Market Place

By DAVE EINARSSON

In our readership survey, we got several requests for more information on what's happening in the industry. So here's the first installment of a new feature by GSI's Marine marketing manager on the current business environment — plus a few Einarsson random thoughts!

- The 1979 North Sea season is shaping up to a 3-vessel operation for GSI, with a high percentage of 3D program.
- Chevron has discovered gas offshore Labrador where GSI conducted a survey during 1978.
- Look for future R&R in Shanghai now that China and the U.S. have normalized relations.
- M/V *Tasman Seal* will return to the Far East — despite my efforts.
- The new ship under construction in Singapore will be named M/V *Karunda*.
- GSI's Queensland spec program of 15,000 kilometers is scheduled for June start.
- M/V *Dunlap* is back shooting spec in Argentina.
- Mexico cites the Campeche area as "another Middle East." We look for increased business in this country.
- Seven gas discoveries have been

- made to date in the Gulf of Thailand, scene of a GSI 3D survey. Dr. C. G. Dahm of Texas Pacific presented a paper on the program at the Society of Exploration Geophysicists meeting last fall in San Francisco.
- Shorty Shipp is back in the Philippines, without Bud Lampkin to look after him. Oh, my God!
- John Anderson is temporarily assigned to Bedford Marketing to help Gerry Gilbert. Jim Manning will replace John in Dallas Marine Marketing.
- Eric Jones' Buddha is still smiling — looking good for 1979 if you'll keep shooting.
- GSI-Dallas should begin the move to new premises in February!!
- *Ocean Oil Weekly* reports a bright outlook for Far East exploration, with increased offshore activity in Indonesia, Malaysia, Vietnam, Philippines, and Australia.

Why Don't They...?

By DERRICK PAINTER

Q. Why do we have so many traces in the streamer?

A. To decide how many groups are to be in a streamer, one has to consider 3 things:

- How long should the groups be?
- How close should the group centers be?
- How long should the streamer be?

All these depend upon the particular geophysical objectives in a survey, but in practice, we use a few basic building blocks to design various streamer configurations to meet most situations.

Group length depends upon the frequencies we are interested in — the higher the frequency, the shorter the group needs to be. This is because the energy received at a group is generally coming up at an angle. For some particular angle and frequency, this will mean that the "trough" (a positive pressure) of a seismic reflection is hitting the back half of a group at the same time as a "peak" (a negative pressure) is hitting the front half of a group. (See Figure 1.)

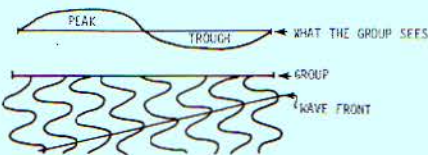


Figure 1.

These will cancel out so that the net output of the group for that reflector is zero. In the southern portion of the North Sea, using a group length of 100m would cause us to lose a 40 hz reflector on a group 2000 meters from the shot at a time of 2.0 seconds. However, if we shorten the group to 50 meters, then this reflector is only 30% weaker than on the near trace (where all the peaks hit the group at the same time). A 25-meter group will allow us to record 80 hz reflectors. As the oil companies want to see higher frequencies, the group lengths have become shorter.

How far apart the groups should be depends upon the dip of the reflectors being recorded and also on the dip of the noise from the shot if we are to have any hope of eliminating the noise. To faithfully record the dipping data, the groups must be close enough together that as one group detects a peak, then the adjacent group picks up the following trough.

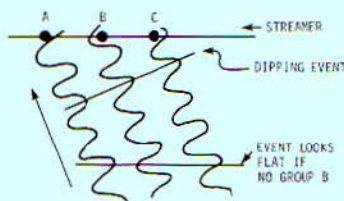


Figure 2.

In Figure 2, showing the energy from a dipping event, Group A is receiving a peak when Group B receives a trough. This is faithfully recorded as a dipping event. If Group B was not there, then we would have a peak at A and a peak at C arriving at the same time, so the event would appear to be flat rather than showing the true dip. This incorrect picture is known as "aliasing." The groups must be close enough to record the dipping data we want without "aliasing." For the events we are interested in, the distance between A and B (the group interval) should equal the group length. (This can still give rise to some problems of higher frequencies being aliased or increased noise on each group. Other contractors have used overlapping groups in the past; i.e., 100-meter-long groups overlapped so the group centers are 50 meters apart, but this has the effect of doubling the number of groups for a given group length.) Another advantage of having the groups closer together is that the oil company interpreter has more traces per kilometer on his final processed section, and this allows him to see more easily subtle changes, such as small faults, which may be smeared over if the traces were farther apart.

Once the interval between group centers is decided, then the total number of groups depends on the length of the cable. A longer cable will pick up more energy returned from the earth and, more importantly, allows better attenuation of multiples versus primaries (see *Mariner News* articles on data processing).

Over the years, oil companies have been more interested in higher frequencies and shorter groups to get a more detailed picture of the earth's subsurface and longer streamers to better eliminate unwanted multiples. This trend will continue. Ninety-six-trace streamers are common in many areas of the world. In Australia, GSI sometimes tows a 200-trace streamer — a sign of things to come.

GSI's prototype 10,000-trace

streamer, with its 9998 pair connectors (nobody's perfect) each weighing 200 lbs, has already been installed on one of our vessels. Tests will continue as soon as the ship has been reflotted.

M/V Carib Seal Still Alive and Well in Brazil

By GUY MALDEN

Greetings from down south to all the folks in GSI! The M/V *Caribbean Seal* is back out on the prowl again after spending nearly a month in Santos in drydock.

While we were in drydock, we installed a full-blown CMS II system, 4800-meter streamer reel, Simrad EA Echo Sounder, Simrad sidescan sonar, and inventory control system.

Also included in drydock were the normal happenings — scraping and painting of the back deck, hangovers every morning, and some unbelievable stories involving the wild and crazy guys on the *Carib Seal*.

On our maiden voyage after drydock, we had the pleasant company of the illustrious Chris Taylor, who checked out the CMS system for us with the able assistance of Larry Rezek and Darryl Bunger.

After having an evening of sport and refreshment — getting one last glass of the spirituous fluid down the neck — the crew was more than ready (ha!) to head for the prospect and shoot the daylights out of it.

We are very much looking forward to going to 96-trace with DFS V instruments in the near future.

Present crew members are: Gary Bartlett, boat manager; John Duizend, administrator; Guy Malden, relief party manager (for Larry Buckmaster, regular PM); Wes Welcome, Ken Dickerman, Darryl Bunger, Larry Rezek, Les States, Dick Inserra, and Jerry Woodward, systems operators; Greg Harris and Brian Sherwood, systems operator trainees; Charles Thibodeaux, master of the galley; and Andy Dunning, Dalbert Hooker, Mike Dancer, and Rick Hadaway, compressor and airgun mechanics.

P&AE...
IT WORKS

What Readers Want to See in Seismic Mariner News

In January, we reported the response to *Seismic Mariner News* reader survey questions which could be analyzed quantitatively, leaving the "open-ended" questions for coverage in this issue.

Response to the question "What subject(s) would you like to see covered in *Seismic Mariner News* articles?" has been especially valuable in our planning, netting more than 50 good suggestions.

For example, we got requests for "What is happening in the industry," "General oil industry gossip (i.e., probable prospect areas)" and "Results of GSI surveys (prospects or fields discovered)," etc. So, to meet the demand for this type information, we're starting a new column by Dave Einarsson, "The Market Place." Dave vows he will also put a lot of good stuff about people in his column.

We have already fulfilled requests for "Stories on things to do at leave centers," "Something more on

gravity and magnetics," "More subjects involving processing crews," "More geophysical articles" (i.e., Derrick Painter's "Why Don't They...?" column), "News of service centers," and "Introduction to good seamanship, mainly for seismic personnel."

In response to the question "What new features would you like to see in the newsletter?" Ruth Wilson is working on a series of articles on each vessel in the GSI fleet, which will include history, where the vessel has worked, photos, etc. Thank you, Ted Lincoln, for this excellent suggestion. Also in the works is input on women in GSI offices — suggested by several readers.

Our "Transfers" column is in response to numerous requests for information on personnel whereabouts. Unfortunately, because of the procedures on disclosure of proprietary information, we cannot publish as much in this area as

readers would like to see. In a future "Why Don't They...?" column, we will list some of the types of information that cannot be disclosed for competitive and other reasons.

In our last question, we asked: "Please make any additional comments that you feel would be helpful in making the newsletter of more interest and/or greater value to you." Some responses:

"Cut down on 'Dallas' dry input."

"Newsletter is good now. Don't let it deteriorate into a P.R. outlet."

"Have more articles in a humorous vein."

"Safety needs to be discussed with less levity."

"Can use more photography"...

"Every issue should carry at least 1 boat picture and 1 processing picture."

"Be less egotistic in what is reported. Mostly stop degrading a ship with vessel performance charts without giving reasons why. Example: Group shot high production — good ship. Low production because of type of program or weather, etc."

We are distributing copies of the complete survey results to each boat manager, party manager, and processing center manager. We will be glad to send the report to any other GSler who wants to receive it. To request a copy, write to the editor at MS 937, Dallas (terminal DNGR).

Again, we want you to know how much we appreciate your participation in the survey, and we encourage you to continue letting us know what you want to see in your newsletter.

Bob Hart: Profile of a Maintenance Supervisor

Pick a boat — any boat — in the GSI navy. Bob Hart, heavy equipment maintenance supervisor, either has been there within the last year or he'll be visiting soon.

He's been installing Halon and fire pumps on all the GSI ships as part of the TI Standard of Safety (SOS) program. At last report, Bob had put new safety equipment in service on 9 ships in 5 countries, with 2 ships and 2 countries still to go.

Meanwhile, he has been involved in the building of the new GSI ship in Jennings, Louisiana, and stopped in Dallas long enough to check over plans for the new chartered vessel under construction for GSI in Singapore.

Bob, who hails from Litchfield, Illinois, began his itinerant career with GSI 20 years ago after graduating from Bailey Tech in St. Louis and spending 3 years in the signal department of the Illinois Central Railroad.

He started out as junior observer on a Land crew in Pecos, Texas, and subsequently worked on Land crews in Bakersfield, California; Rawlins, Wyoming; and Sumatra in the capacity of observer, instrument engineer, or party manager.

"From 1961 to present, I've been on

more Marine crews than I can remember in many places in the world," he recalls. Bob worked out of the Singapore office from 1969 to 1975, mostly as a party manager. He also spent 9 months in Newcastle, Australia, overseeing the building of the M/V *Eugene McDermott II*.

Bob Hart



A connoisseur of fine food, Bob likes to try different types of cuisine wherever he travels in the world. While in Dallas, he was out sampling the wares of several of the classier restaurants along Greenville Avenue.

Other hobbies include helping with the family bar whenever he is at home.

R&R

(Eat, Drink & Be Merry)

Exploring Downtown Dallas

If you are looking for something different to do in Dallas on a weekend or have to go downtown for passport renewal or other business, take a little time to explore downtown Dallas.

Within a few blocks of the Dallas County Courthouse are several sites of historical interest, new futuristic additions to the Dallas skyline, and unusual restaurants where the food is good and the prices reasonable.

You can start by visiting the oldest

Continued on Page 10

R&R

Continued From Page 10

house in Dallas — the log cabin built in 1841 by John Neely Bryan, the city's founder. It's located at Elm, Main, and Market, across from the "Old Red" courthouse (which dates from 1890 and is the best example of Romanesque architecture in Dallas).

Walking west on Elm, you quickly reach Houston Street, Dealey Plaza, and the Texas Schoolbook Depository Building, setting of the tragic assassination in 1963 of President John F. Kennedy.

Now go south about three blocks on Houston to the Union Terminal Building. The stately old railroad depot, built in 1914, has recently been restored as part of the Reunion project, which includes the new Hyatt Regency Hotel. Downstairs are the Amtrak and Surtran (transportation to D-FW Airport) terminals and upstairs — in the elegant old Grand Hall — are a variety of stands like sidewalk cafes where you can get a good light lunch.

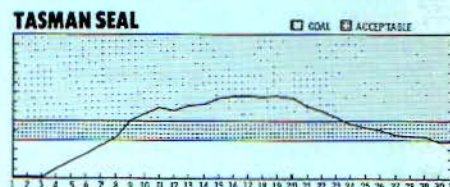
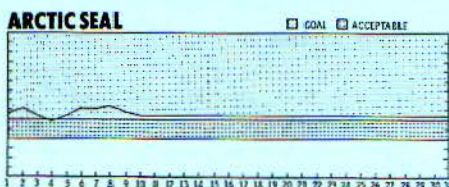
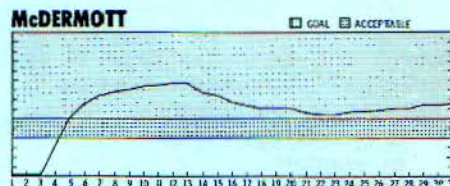
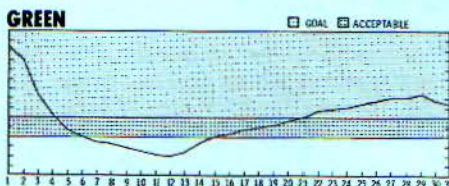
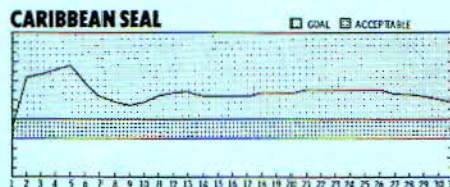
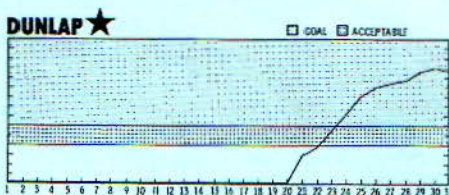
At Kelly's Fish Market, open 7 days a week from 11 a.m. to 11 p.m., you can order a shrimp sandwich on San Francisco sourdough bread or a shrimp cocktail. Add a small bottle of wine or a beer, and have a seat in the Grand Hall or on the terrace overlooking downtown Dallas. Then, enjoy your lunch while watching all the railroad buffs admire the remodeled terminal — now named to the National Register of Historical Places.

An underground walkway takes the visitor to the station platform (just in case you want to catch a train) or to the mirrored glass Hyatt Regency Hotel. For \$1.50, you can ride the elevator to the top of the Reunion Tower, topped by an observation deck, a revolving cocktail lounge, and rather overpriced restaurant. Lighted at night and visible for miles around, the tower is known informally as the "Electric Dandelion."

Though a stay at the Hyatt Regency is a bit pricey, you can soak up some of the atmosphere for nothing by strolling around the lobby. Then retrace your steps to the railroad station, return on Houston Street to Commerce, and continue east to JFK Memorial Plaza. Here a 30-foot-high pre-cast concrete memorial honors the slain President.

Within a few blocks' walking distance, at Young and Ervay, is Dallas' new City Hall, designed by I. M. Pei. This has been described by

Vessel Recording Performance December 1978



★ VESSEL OF THE MONTH

architectural critic Ada Louise Huxtable as "undeniably among the most interesting urban constructions of the 20th century." The building's most unique feature is its cantilevered front, which slopes outward at an angle of 34 degrees.

The City Hall's slanting facade serves as a backdrop for a massive 15-foot bronze sculpture by Henry Moore, the world's most famous living sculptor, which he calls "The Dallas Piece." This is the British sculptor's largest work to date.

If you are downtown during the week, another fun place to eat is Tolbert's Native Texas Foods and Chili Museum at 802 Main. Frank X. Tolbert, columnist and Texana authority for the *Dallas Morning News*, founded this establishment specializing in homemade Texas "red" chili and hamburgers. It's open from 11 a.m. to 2 p.m. Monday through Friday. Beer served.

Note: Tolbert's Texas Chili Parlor at 3802 Cedar Springs (near Oak Lawn) is open at night and on Saturday.

Another suggestion: If you're downtown on Sunday, there's plenty of free parking on the street.

Frank, known to all as "Kebe," joined GSI in 1952 as first computer (data processing) and served in various capacities in Brazil, the United States, and Canada.

He will be missed by all his co-workers and worldwide friends, who extend their deepest condolences to Mrs. Kebe and family.

Thank Goodness It's Friday!



David Beevers using Sydney's innovative off-line method for detecting spikes on field tapes. Photo by Peter Scott.

Frank Kebe, Calgary Marine Processing Supervisor, Dies

Frank Kebe, Marine processing supervisor, passed away suddenly on December 4 in Calgary.