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No. 17 FALL 1996

MSAT NEWS

Canadian bird is flying high

On June 3, TMI Communications switched all their customers over to its new MSAT-1 satellite.

Previously, TMI had been leasing space on the AMSC-1 satellite, owned by American Mobile Satellite Corporation, so it could provide mobile satellite communications service until MSAT-1 was launched. The two satellites are nearly identical and were always intended to act as a backups for one another. AMSC's satellite was launched 7 April 1995.

The transfer was accomplished without any service interruptions, says Allister Pedersen of TMI. He adds that "some of our western customers may notice a slight improvement in reception since our satellite is placed a little further west than the American one."

The move became possible once TMI completed 33 days of testing on the MSAT-1 satellite following its April 20 launch. An *Ariane 42P* rocket supplemented with two solid-fuel boosters carried MSAT-1 into space from Arianespace's ELA2 site in Kourou, French Guiana.

MSAT-1 is located at 106.5°W longitude, 36 000 km above the equator. From that location, it can provide coverage to the entire North American continent, including up to 400 km offshore, as well as Central America, the Caribbean and Hawaii. It can carry up to 2000 simultaneous calls from users with terminals mounted on vehicles, ships and aircraft.

The commencement of service through MSAT-1 is one of the most significant events in Canadian mobile telecommunications history, says John Farrell, TMI's President and Chief Executive Officer. "We have achieved our goal of offering MSAT service based on a Canadian-owned and -operated satellite." ●

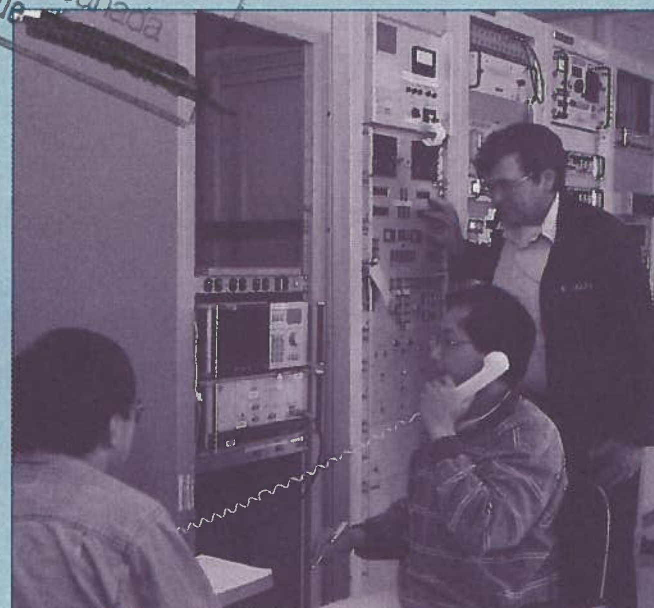

Photo: Janice Lang/CRC

Ernie Matt (far right) of the Communications Research Centre assisted TMI Communications with in-orbit testing of MSAT-1 during April. Mr. Matt, along with Vui Min Chang (left) and Roger Yip (centre) of Telesat Canada, received the very first L-band signals from the satellite.

MSAT News says goodbye

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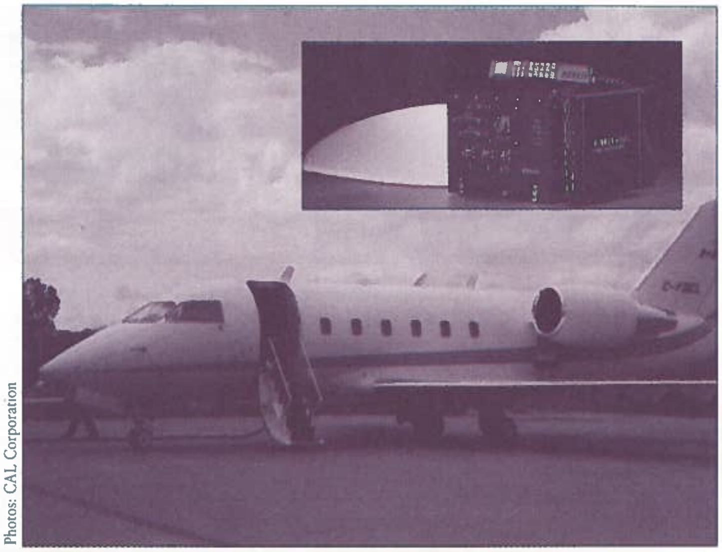
Industry Canada Industrie Canada

Canada

Satellite phones now in flight

A CALQUEST™ Satellite Phone (right, inset) manufactured by Ottawa's CAL Corporation was recently installed in a Challenger 601 corporate jet. Service will be provided by Mobility Canada, one of TMI Communications' national full-service providers. By using the MSAT Network, customers have access to in-flight telephone, fax and data communications. It is interesting to note that the service provider, the satellite, the network, the equipment and the aircraft are all Canadian.

The new aeronautical mobile satellite communications service is offered at a much lower cost than that currently available from Inmarsat. It also provides complete coverage throughout North America, unlike terrestrial-based alternatives which are limited to the more heavily traveled air routes. "CALQUEST is a real break-through in aeronautical communications," says Neil MacKay, President of CAL Corporation.



Photos: CAL Corporation

GTIS Notes

GMSS launched

On April 3, Government Telecommunications and Informatics Services (GTIS) announced the launch of its satellite communications network that will serve federal government clients.

Government Mobile Satellite Services (GMSS) is a wireless communications network that uses the MSAT Network to deliver mobile voice and data services. It can also be used by government agencies seeking fixed voice and data communications from remote locations.

A brief ceremony was held to commemorate the launch at TMI Communications' offices in Ottawa. Philip McLellan, Assistant Deputy Minister, GTIS, was the master of ceremonies. The featured speakers were Ranald Quail, Deputy Minister of Public Works and Government Services Canada, Tom Skidmore, President and Chief Executive Officer of Glentel Inc., and John Farrell, President and Chief Executive Officer of TMI Communications.

In addition to providing mobile communications for federal government users anywhere in North America, the inauguration of GMSS demonstrates the power of strategic alliances between the public and private sectors, said Mr. Quail.

GTIS/Glentel alliance to deliver GMSS

GTIS has signed a five-year contract with Glentel Inc. to have the British Columbia firm help deliver GMSS.

Glentel is an ideal partner for GTIS because it is an established private sector provider, explains Al Kingan, Director, Mobile Satellite Services. "Glentel has all the infrastructure in place — 200 locations across Canada — to provide sales, service and support."

The two organizations will work as a team. When clients need help, staff from the two organizations will co-ordinate their efforts.

"Given the combined resources of GTIS and Glentel, we can set up service within 48 hours of a client's call," says Mr. Kingan.

The team is also able to provide the service at a very attractive price because the federal government has purchased a large block of time on the MSAT Network, he adds.

The co-operation will even extend into marketing activities, says Mr. Kingan. "We will be sharing marketing collateral," he explains. "For example, we are creating joint logos for use on our marketing materials."

Either GTIS account managers or a Glentel representative can be contacted by federal government personnel seeking GMSS services. For more information, please call (819) 956-4444.

GMSS delivers clear signals on ice

Government Mobile Satellite Services (GMSS) communications recently helped a research team working on an ice island near the Northwest Passage.

The six-person team worked with a fixed-location MSAT Communicator as part of a 90-day market trial that began on April 15. The unit was powered by a field generator and used a one-metre satellite dish mounted on a tripod to receive signals from MSAT-1. The camp was on a large ice island in the Wellington Channel just east of Cornwallis Island (approximately 75°N latitude, 90°W longitude).

An ice camp is held annually by Environment Canada's Ice Centre, Atmospheric Environment Service, to monitor ice conditions in regions near the Northwest Passage.

Past ice camps have had to use unreliable and noisy high-frequency radio communications, says Ken Asmus of the Atmospheric Environment Service. "In many years of field experiments in the North, we have never before been able to get such incredible communications as we had this year with GMSS."

The team used their MSAT Communicator as a field phone and also to receive ice images of the area where the camp was located that were collected by Canada's RADARSAT satellite. The team verified these images against the actual conditions on the surface. ●

Taking telemedicine to new heights

In early June, six Canadian mountain climbers celebrated reaching the base of the 5959-m summit of Canada's highest mountain by calling home on an MSAT Communicator.

But the climbers were on Mount Logan, which is located in the southwestern corner of the Yukon, for more than just a telephone call. They were part of a research mission to study how the central nervous system controls heart rates. Researchers at Ottawa's Heart Institute received data transmitted from the mountain via the MSAT Network.

TMI Communications were proud to support the team by supplying the communications equipment, says John Farrell, TMI Communication's President and Chief Executive Officer. "In return, the expedition members have demonstrated the capabilities of the MSAT Network in a spectacular way," he adds.

The team carried an MSAT Communicator, enclosed in a compact briefcase that gave them both voice and data access to the rest of the world. The Logan team transmitted data, digital photos, E-mail and even short segments of video through MSAT-1 back to the Heart Institute, more than 4000 km away.

The research project has been the subject of international interest, says Dr. Andrew Pipe, a physician at the Heart Institute and Research and Project Advisor to the Logan team. "This has exciting applications for telemedicine, as well as for the heart research project itself. I think they've achieved a great deal." ●

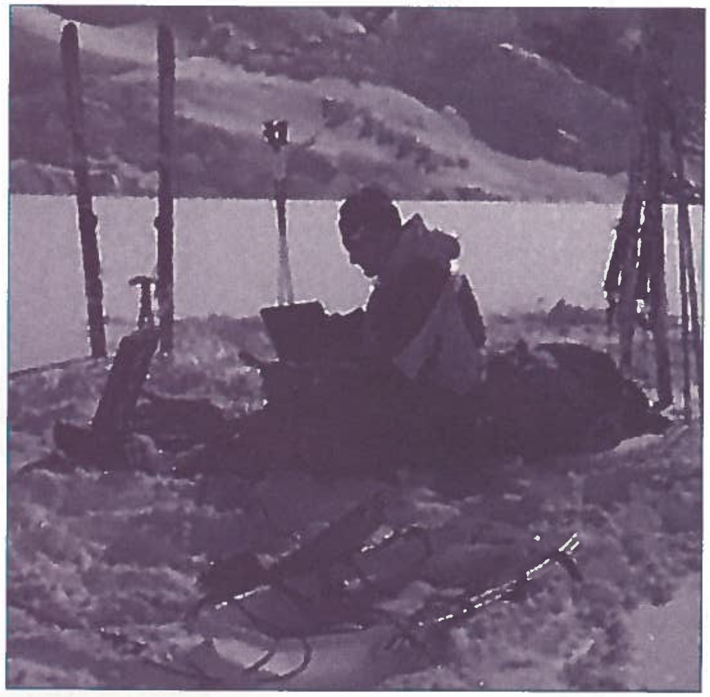


Photo: TMI Communications

A member of the Mount Logan team uses the transportable terminal to communicate with staff at the Heart Institute in Ottawa. This picture was taken using a Kodak DC50 digital camera and then transferred to Ottawa over the MSAT Network.

MSAT News says goodbye

A message from Demetre Athanassiadis, Director, Major Satcom Programs, Communications Research Centre, Industry Canada

This is the last issue of *MSAT News*. The newsletter has served its purpose well, but it is now time to pass the torch on to others.

The launch of MSAT-1 on April 20 was a very important milestone and we at the Communications Research Centre congratulate TMI Communications for this achievement. TMI staff have worked long and hard to get this far and have overcome several major obstacles in the process. Their success to date bodes well for the future of the MSAT Network.

Collectively, TMI and its service providers — Glentel, Mobility Canada, Infosat Telecommunications and Government Telecommunications and Informatics Services (GTIS) — will now assume responsibility for keeping the MSAT community informed of any new developments concerning the network. Most regular readers of this newsletter are probably already familiar with TMI's quarterly magazine *Coverage*, of which two issues have been published. A copy is being sent to all Canadian readers with this issue of *MSAT News*.

Federal government personnel interested in learning more about MSAT services should get in touch with their GTIS Account Manager and ask about Government Mobile Satellite Services (GMSS). If you have any questions, contact GTIS at (819) 956-4444. GTIS and its designated service contractor, Glentel, are preparing a variety of material to keep the federal public service abreast of all the latest news concerning GMSS. (*MSAT News* readers will automatically receive this material. If you would like your name removed from the distribution list, contact Glentel by fax at 1-800-636-6381 or call 1-888-211-1110.)

The Communications Research Centre is currently winding up its involvement in the MSAT Program. We do so with considerable pride having put in more than 25 years' work contributing to the planning, development and launch of Canada's first mobile communications satellite. We feel privileged to have been involved in the MSAT Program and to have met and worked with so many gifted people over such a long time. However, there are also other tasks now awaiting us, not the least of which is supporting the effort to create the next generation of mobile and fixed satellite communications systems. ●

MSAT Messaging

It's here. It's inexpensive. It goes anywhere.

In slightly more than a year, MSAT Messaging has gone from being a glimmer in developers' eyes to the least expensive satellite communications service offered anywhere in the world.

The new service uses technology developed by Ottawa's Calian Communications Systems Ltd. that receives signals from the satellite and rebroadcasts them to a nearby pager. "One of the best things about developing this service was working with aggressive small Canadian companies such as Calian," says Lynda Partner, TMI's Vice-President of Sales and Marketing.

"To the best of our knowledge, this is the least expensive satellite communications service available anywhere in the world," adds Ms. Partner. For the most basic service, MSAT service providers are offering service and equipment for as little as $55 a month. If users prefer to purchase rather than to rent their equipment, service-only charges begin at $39.95 a month.

This price is also very competitive when compared to terrestrially based alternatives, adds Ms. Partner. The MSAT Messaging service is also the only one that broadcasts directly from the satellite to the recipient giving it a range that no other service can match. "Other companies that claim to offer satellite services actually use satellite communications to send signals to paging towers that rebroadcast to recipients," explains Ms. Partner. "With MSAT-1 we have the world's highest paging tower, making the additional step unnecessary."

The message sent can consist of a telephone number or of a few words and numbers. Those in the industry prefer to call the service "messaging" rather than "paging" because numeric and alphanumeric information can be sent rather than just a simple alert. MSAT Messaging is available through TMI's service providers, including Glentel Inc., Mobility Canada and Government Telecommunications and Informatics Services.

The first generation of MSAT pagers are ideal for users who will be spending a lot of time in their vehicles while travelling through remote areas. Potential customers include forestry and mining inspectors, fleet operators and emergency crews, says Ms. Partner. "This service can be used by anyone who has staff travelling a long way in their vehicles and may want to send them a message, even if it is just, 'Stop. Call home office'." ●

Getting the Message Across

With MSAT Messaging, senders have three ways of getting their message into the system. With number-only pagers, senders call a service and use a touch-tone phone to enter the telephone number they want the recipient to call. With alphanumeric pagers, they can call a service bureau operator who will type in the message and send it; or purchase a piece of software for their own computer that will allow them to type the message in and send it themselves.

Once entered, the message is sent to TMI's communications ground segment in Ottawa where it is routed to the correct recipient through the MSAT Network using a telecommunications switch developed by Glenayre Communications of Vancouver.

The satellite signal is received by a tiny disc antenna, less than 9 cm in diameter, mounted to the roof of the recipient's vehicle. This antenna is connected to a small receiver that is about the same shape and size as a pager. The receiver then rebroadcasts the signal to the actual pager, which can be located anywhere in the vehicle. ●

Photo: Janice Lang/CRC

Allister Pedersen of TMI (right) demonstrates a transportable terminal to Vi Goyette of the Communications Research Centre during the centre's open house in June. The unit pictured, produced by Mitsubishi Communications Group, is one of two telephony units that can be used with the MSAT Network.

MSAT News

MSAT News has been produced by Industry Canada to increase awareness of the MSAT program and related technologies. This is the last issue. The *MSAT News* mailing list has been provided to both TMI Communications, for use with their magazine *Coverage*, and to GTIS, for use with their service provider, Glentel. See the article on page 3 for more information.

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