



Broadcaster

CANADA'S COMMUNICATIONS MAGAZINE

MARCH 1993

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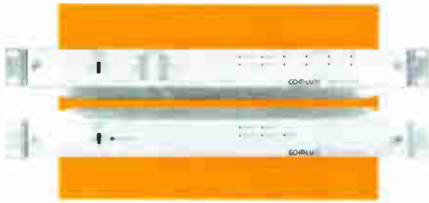


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■ SPECIAL EVENTS

CALENDAR

MARCH 5

TV93 conference and workshops, Sutton Place Hotel, Toronto, Ont. Contact (416) 638-5423.

MARCH 8-12

SIS Satellite Information Seminars, Toronto, Ont. Call (613) 748-8785.

MARCH 18-19

Canadian Satellite Users Association conference and trade show, Toronto Airport Hilton Hotel, Toronto, Ont. Contact (416) 620-4332.

MARCH 22-26

SIS Satellite Communications Seminars, Montreal, Que. Contact (613) 748-8785.

APRIL 4-7

Can-Pro Festival, Radisson Hotel, London, Ont. Contact (403) 436-1250.

APRIL 18-22

National Association of Broadcasters convention, Las Vegas Convention Center, Las Vegas, Nevada. Contact (202) 429-5350.

APRIL 19-23

SIS Satellite Communications Seminars, Ottawa, Ont. Contact (613) 748-8785.

APRIL 26-30

SIS Satellite Communications Seminars, Vancouver, B.C. (613) 748-8785.

MAY 18-20

British Columbia Association of Broadcasters convention, Kamloops, B.C. Contact (604) 635-6316.

MAY 26-29

Multimedia 93 conference and trade show, Metro Toronto Convention Centre, Toronto, Ont. Contact (416) 660-2491.

MAY 30-JUNE 1

Central Canadian Broadcasters Association convention, Radisson Hotel, London, Ont. Contact (613) 233-4035.

JUNE 5-7

Western Association of Broadcasters convention, Kananaskis, Alta. Contact (204) 324-6464.

JUNE 6-12

Banff Television Festival, Banff, Alta. Contact (403) 762-3060.

JUNE 18-20

Atlantic Association of Broadcasters convention, Moncton, NB. Contact (902) 422-1651.

Broadcaster®

CANADA'S COMMUNICATIONS MAGAZINE

Volume 52 Number 2

11 CODES FOR SUCCESS: Canada's digital audio radio proposals are world-class. What's the next step for broadcasters?

18 DVC BY SATELLITE: A technical description of Telesat's satellite-delivered digital video compression system. Part 1.

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25 NEW PRODUCTS: New equipment from Abekas, Strassner, Panasonic, etc.

CTV National News anchor Lloyd Robertson is now Canada's favorite TV news personality. Ratings for CTV's 11:00 p.m. news package have grown dramatically since the CBC introduced Prime Time News at 9:00 p.m. and cut regional late-night newscasts. See Update, pg.6.



■ A bit stream of digital codes is the key to the success of Canada's digital audio broadcasting system, now being tested. Interpretation and rendering by Alan Bates of Southam Creative Services.

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STRUCTURE SOUNDINGS

By the time you read this, the CRTC's prophetic television "structure hearings" will be well under way. The most extensive hearings ever held by the Commission, calling for nearly 200 appearing intervenors over four weeks, will be attempting to come to grips with a new future for Canadian television — and for the CRTC itself.



Uppermost in its concerns is a new competitor facing the Canadian television industry — already evolving and adapting to new forms of competition — that may be the most powerful and appealing yet. "Death star" may be an overly-dramatic (and over-simplified) description of American direct-to-home (DTH) satellites, but this potential revolution in television entertainment from the U.S. deserves all the attention it is now receiving.

Not so long ago, the threat of a "death star" began to acquire a hollow, cry-wolf image. The alarm caused by the arrival in Canada of the American DTH company SkyPix quickly diminished as the SkyPix invasion faded to a fiasco. Some even dismissed further DTH alarms as attempts by Canadian cable companies to maintain a level of anxiety in order to benefit from regulatory concessions.

This same tactic, some say, has also helped deflect demands by broadcasters for programming fees from cable companies. This bitter debate will be addressed again and again at these hearings, and its resolution will fully test the mettle of the CRTC.

In retrospect, Canadian broadcasters

and cablecasters might regard the SkyPix mess as a blessing. It has given them some breathing room for the luxury of having a "structure hearing" before the familiar industry structure around them begins to radically change.

They have begun not a moment too soon. In late

February, about two weeks before the hearings began, another, more potent DTH player from America made public its business plans. Hughes Communications Inc. announced the creation of Hughes DirecTV Canada, and stated that it would begin selling up to 150 channels of satellite TV to owners of mini-receive dishes. The company acknowledged that the CRTC "has no jurisdiction over its operations."

It's that kind of disregard for cultural borders which is not only an issue for the business of broadcasting and cablecasting, but for the business of the CRTC itself. The determination by Canadian companies such as Telesat and Rogers to meet the American DTH challenge, before any industry structure pronouncements are made by the CRTC, also indicates that the domestic industry is making fundamental changes without the participation of the regulator.

These structure hearings may have implications for more than just TV broadcasters and cablecasters. They will also likely have a bearing on the future functions of the CRTC.

UPDATE-TV

AT CTV...

The CTV Television Network has finally laid its unwieldy and costly co-operative ownership structure to rest, replacing it with a more streamlined, business-like relationship.

The eight owners of the 25-station network reached the new agreement in late January, ending (hopefully) some of the more acrimonious aspects of the ownership collective. In fact, for starters, the number of owners was reduced to seven, with **Newfoundland Broadcasting Co.** opting for a pure affiliate deal with CTV.

In the new ownership agreement, these seven companies (**Baton Broadcasting Inc., CFCF Inc., CHUM Ltd., Electrohome Ltd., Maclean Hunter, Moffat Communications Ltd., and Westcom TV Group Ltd.**) agreed to inject a total of \$14 million into CTV. The amount invested by each was determined by company size. The investment was made in convertible debentures, for eventual conversion to CTV shares.

One of the most significant parts of the new agreement is the elimination of veto power formerly held by each company in the CTV co-operative. That had given each company equal power in the affairs of CTV, regardless of how many network stations it owned, and allowed even the smallest company to nix majority-supported proposals. Decisions amongst the owners will be now

be made by a majority vote, rather than unanimous approval.

"Welcome to the real world," said CTV president **John Cassaday**. "We're going to move out of the cocoon of a co-operative and into the competitive marketplace of the 1990s."

The agreement, and investment, will allow CTV to deal more effectively with debts accumulated in 1990 and 1991. It should free CTV to devote its energies to revenue growth through joint ventures, production of big events such as the 1994 Winter Olympics and plans for a 24-hour news cable network.

► ... While CTV's station owners were re-thinking the ownership of the network, upper level personnel changes within the network itself were also taking place. Cassaday said these changes would mean a restructuring of functions, reporting lines and responsibilities touching every department of the network. This, said Cassaday, was how CTV would "compete successfully in a TV market crowded with more competing viewer choices than ever before."

A total of 29 middle-management and executive jobs were cut, with 20 of those people accepting early retirement and nine others being laid off. CTV says this 6% reduction in its workforce will save the network \$2 million.

"In news, an entire administrative layer that reported to the v.p., news (**Eric Morrison**) is gone," says CTV president John Cassaday. "Now the news chiefs report directly to Eric."

► ... As these changes were unfolding, CTV was pleased to discover that more Canadian news viewers were choosing to watch the CTV *National News* instead of CBC's new Prime Time News package. An **Environics** poll of 536 viewers found that the number of viewers watching CTV's *National News* between mid-October and early December increased from 45% to 59%. In the same 8-week period, the number of viewers watching Prime Time News dropped to 41% from 55%. Ratings done by **A.C. Nielsen** indicate that the number of people watching the CTV news rose from 1 million to 1.5 million from September to January, while CBC's numbers have dropped by about 300,000 over the same period of time.

► ... CTV also scored a first in Canadian television history by selling a Canadian-produced series for daytime programming to a major U.S. network. In early January, **ABC** announced that it would begin airing "*Shirley*," CTV's successful entrant in the "talk show" sweepstakes. ABC will introduce "*Shirley*" to American viewers in April, 1993.

AT CBC...

The news at CBC-TV, meanwhile, has been less cheerful, as it has slowly been losing viewers during its three-part prime-time schedule. The number of people watching programs in CBC's Monday-to-Friday *Family-Prime Time News-Adult* programming schedule has slipped by two percentage points since the schedule was introduced in early November.

The most glaring sore point in the "tri-schedule" is the *Prime Time News* package, which is apparently losing audience to CTV's *National News* (see above.) CBC moved its major evening news show to 9 p.m. to better serve aging, sleeper boomers, but critics of the move say that there are at least as many viewers who prefer primetime entertainment programming at 9, and are willing to wait until later for the news. Hence the loss in audience for Prime Time News.

But CBC's v.p., news, **Tim Kotcheff**, says there are other factors at work in the audience shift.

"CTV picked up many viewers after CBC dropped its late night local and regional newscasts," says Kotcheff. "Plus, *NewsWorld* has made very good audience gains since it started airing *The National* at 10 p.m. (News-

world's audience at 10 has grown from 20,000 to more than 100,000). Together (with Prime Time News), CBC's news audience has actually grown."

Besides, says Kotcheff, "it's not our role to compete head on (with CTV). Our mandate is to provide good quality journalism."

► ... Despite this, CBC program architects, led by a new producer, ... , have set to work retuning the presentation of *Prime Time News*. Gone is the "seamless" mix of hard news and feature items. Instead, the news has assumed a more traditional "pyramid" structure, with hard news occupying the first 20 minutes of the news hour.

"People were getting frustrated sorting out the news from the more in-depth material," admits Kotcheff.

► ... CBC's legal department has been kept busy in recent months dealing with broadcast restrictions placed on *two* CBC programs. Airing of the controversial drama, *The Boys of St. Vincent* was prevented in Ontario by a court order stating the show could prejudice the trials of four "Christian Brothers." And an interview in an AIDS documentary called *Tainted Blood* was also banned from airing



▲ **Peter Mansbridge and Pamela Wallin watch the ratings dwindle at *PrimeTime News*.**

by the courts.

► ... As though these setbacks weren't enough, CBC also heard the final, damning work from a Senate subcommittee regarding its three-part World War II documentary, *The Valour and the Horror*. The sub-

Continued on page 8

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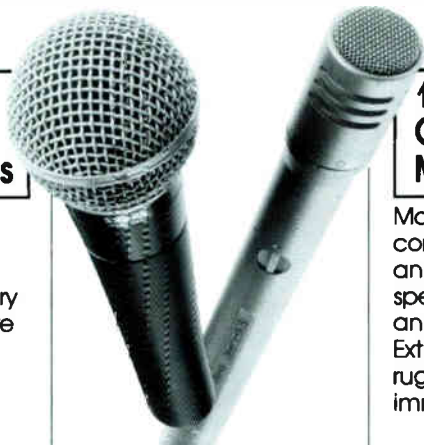
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World Radio History

From page 6

committee advised that a disclaimer be added to the series stating that it is a docudrama rather than a documentary. It also suggested that the NFB, which helped produce the show, create a brochure indicating that *The Valour and the Horror* has "biases" and "inaccuracies."

Director and co-writer, Brian McKenna reacted that "the kangaroo court has issued its verdict, and it's no surprise they didn't like the film.

There should be a disclaimer on the Senate for film makers," added McKenna.

AT CANWEST GLOBAL...

Technically, the CanWest Global "system" of stations may not be a television network, but Asper-ations to that end apparently continue. In late January, a tour of some Maritime TV stations by CanWest officials stirred



▲ Charles Weber, CEO of

CanWest Global International.

rumors that the company was seeking to fill the far-eastern hole in its national system. At press time, there was still no confirmation of a deal between MITV, CHSJ-TV and CanWest — and system gaps remain in Montreal and Alberta.

► ... Deals, however, *have* been confirmed between CanWest and two TV networks on the other side of the planet. Most recently, CanWest completed an agreement to buy into the ownership of Australia's **Channel Ten TV** network. CanWest became a "significant member" in a mostly-Australian consortium of companies that bought 100% of Channel Ten. CanWest expects to invest between \$45 million and \$50 million in the transaction, which totalled about \$207 million.

Continued on page 9

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Circle Reply Card No. 5

From page 8

Just over a year ago, CanWest bought a 20% share in New Zealand's **TV3** network, helping to lift the financially-beleaguered broadcaster out of receivership. CanWest's considerable experience in nursing TV operations back to health has already paid dividends for TV3. Improved transmissions of the TV3 signal and a different programming mix have yielded an increase in its share of the national audience, to about 20%

► ... All this activity "down under" helped lead to the recent creation of **CanWest Global International**, which will acquire and develop other international investments. **Charles Weber** is heading up the division as its CEO, and will establish offices in both Los Angeles and Winnipeg.

► ... These acquisitions did not stop CanWest Global Corp. from posting the most profitable year in its 19-year history. CanWest made \$14.9 million in 1992, as compared to profits of \$9 million in 1991. First quarter profits for 1993 were an encouraging \$8.1 million.

TSN, RDS In Midst Of Labatt Sale

A mid-February shift in the powers that control Canada's second-biggest beer maker may have an effect on **TSN**, The Sports Network and **RDS**, Le Réseau des Sports.

The 38% interest in **John Labatt Ltd.**, held by **Brascan Ltd.**, a holding company for the **Edper Bronfman Group**, was sold for \$993 million to investment dealers unnamed at press time. These shares were in turn sold to institutional clients such as insurance companies, also unnamed at press time. The transaction officially closes March 8.

Labatt owns **TSN**, **RDS**, 90% of the **Toronto Blue Jays** and two large dairy companies — not to mention 44% of Canada's beer market (50% is held by Molson Breweries).

The sale was made just three days after Edper Bronfman sold off controlling interest in the forestry giant MacMillan Bloedel Ltd. The nearly \$2 billion raised by the sales represent the largest equity financings in Canadian business history.

Baton Takes TV Reins From Blackburn Group

As predicted, the acquisition of two Ontario TV stations and creation of a third by **Baton Broadcasting Ltd.** was approved by the **CRTC** in late January. The **CRTC** rejected arguments that the buys would destabilize **CTV** and finan-

cially hamper the operation of **CTV's** Kitchener affiliate, **CKCO-TV**.

The **CRTC** instead viewed **Baton's** substantial cash commitment to the three stations as of greater benefit. **Baton** will spend \$28.6 million to acquire **CFPL-TV**, London and **CKNX-TV**, Wingham from The Blackburn Group, and committed a further \$23.8 million for development and programming costs over the next seven years.

\$3.2 million of that will be spent to build the new station — **CHWI-TV** — in Wheatley, which will devote some of its schedule to rebroadcasting **CFPL's** signals to the Chatham-Windsor area. **Baton** will spend \$16 million on new programming for the three stations, \$4.8 million of which will be devoted to the production of local programming for Wheatley.

Update continued on page 26

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DAB DEVELOPMENTS

What are the next steps in the evolution of digital audio broadcasting for Canada?

▼ **Paul Racine, DOC**
ass't deputy minis-
ter: "We expect to
issue a frequency
allotment plan by
early 1994."

By Ian Sutton

Broadcasters, engineers and governments worldwide appear to agree that Canada has taken a clear lead in development of a workable CD-quality digital radio broadcasting system based on European technology.

But some major questions remain unanswered — all of them inter-related: Will United

States broadcasters insist on implementing a digital radio system that may be incompatible with that used in Canada and other countries? How soon will 'affordable' digital radio receivers reach store shelves — and how quickly will consumers buy them? And how much of a stimulus will digital provide to a flagging radio industry?

Answers to these and countless other questions are being aggressively pursued as industry and government work towards introduction of commercial digital broadcasts from Canadian terrestrial transmitters by as early as 1995. Engineers from the Canadian Broadcasting Corporation (CBC), private radio, the Department of Communications (DOC) and the Communications Research Centre are now conducting field tests with two digital transmitters in Toronto and Barrie, Ont.

Already, these tests have demonstrated that identical digital programming can be broadcast by two widely-spaced stations on the same frequency without interfering with each other. This has been accomplished using "smart" receivers that combine identical signals from more than one source. This capability will eventually enable broadcasters to extend coverage within adjoining areas through a "single frequency network."

The tests will also determine the L-Band coverage range (indoor and outdoor), the effects of varying antenna heights and ERP; long-term fading characteristics; optimum antenna/power/cost combinations for transmission; etc. Another digital transmitter will begin testing in Montreal early this spring, while a planned mobile digital receiver will determine suitable antenna configurations for mobile digital radio reception.

Two major developments

were keys to establishing Canada's leading role in development of a digital radio (DR) system — also known as digital audio broadcasting (DAB). The first involved successful tests of the Eureka 147 digital technology, developed by a European consortium, followed by demonstrations of this prototype system in four Canadian cities in 1990. Second was Canada's coup last year in winning international approval for adoption of the "L-Band" spectrum (1452 to 1492 MHz) for digital broadcasting at the World Administrative Radio Conference (WARC) in Spain.

"All the work we do says to us more and more that we're on the right track," says Steve Edwards, Chairman of the Engineering and Technology Committee of the Canadian Association of Broadcasters (CAB). "This is an incredibly flexible medium we're talking about — it looks to us that we're going to achieve even more than the Europeans thought."

The major advantage achieved with adoption of the L-Band for DAB is elimination of the multipath interference that has always marred the quality of FM signals. The L-band also offers much greater spectrum for transmission of signals from existing AM and FM radio stations.

U.S. broadcasters — particularly owners of the 6,000 American FM stations — favour a system (known as In-Band, On-Channel) that would use the same frequency spectrum as existing analog AM and FM transmitters. But there's general belief among Canadian engineers — a belief shared by many of their U.S. colleagues — that the In-Band system will be vastly inferior to L-Band. Canada also is acknowledged to be far ahead of the U.S. in tests of its preferred system (SEE SIDEBAR).

Continued on page 12



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World Radio History



From page 10

"Our thought was if we had a brand new band to work with, where we didn't have to protect any existing services, we could have one that really does give the kind of improvements that the broadcasters — and we believe the public — are looking for," says Wayne Stacey, an Ottawa engineer who chairs the digital radio group for Canada's Joint Technical Committee on Advanced Broadcasting.

The L-Band spectrum, Stacey adds, will accommodate both terrestrial and future satellite digital transmissions. Satellite-delivered digital broadcasts, which would serve national or regional audiences, can't be added into the existing AM and FM bands, he says.

"We're probably further advanced than any other country in terms of the systems research," Stacey says.

Paul Racine, DOC assistant Deputy Minister with responsibility for communications and cultural policy, says the DOC accepted the recommendations of the radio industry's 1992 Action Plan for "speedy introduction of digital radio" as one way of improving Canadian radio's competitiveness and financial health. That's why communications minister Perrin Beatty made the federal com-

mitment of \$1 million to a research and development fund, with matching contributions to be made by the CBC and private broadcasters.

The current timetable, Racine says, calls for a report to the minister on a regulatory framework for DAB by this spring, completion of design work on world technical standards by the fall, followed by a decision from manufacturers on design standards which will permit mass production of digital radio receivers.

"We expect in early 1994 to be able to issue an allotment plan which will give broadcasters a detailed look at what frequencies are available to them. The CRTC could hold hearings to discuss the regulatory approach by March or April of 1994, and commencement of service — maybe 1995."

While present plans call for AM and FM to coexist with digital broadcasting for several years (some say as many as 15) until consumers are well equipped with digital receivers, widespread digital penetration could happen sooner than many expect, Racine suggests.

"Provided the receivers are at an affordable price, the transition could be extremely quick — like the transition to colour television."



▲ **David Colville, CRTC executive committee chair: Digital radio is "a replacement technology" for current radio systems.**

David Colville, who chairs the executive committee of the CRTC, says the commission sees digital radio as "replacement technology," not as another tier of broadcasting that would only add to the current level of competition — a position the CRTC shares with Perrin Beatty. "That's not to say there may not be some other players who may enter the market," he adds.

Colville points out that the radio industry has long suggested the commission issued too many radio licences over the years "and that we've got too many radio stations chasing too few dollars — particularly in some markets." The CRTC, he says, through changes in FM regulations, has tried to make it possible for AM stations to thrive, "but once you move into a digital world, there's no more AM and FM — it's just 'radio'."

While the regulatory process hasn't yet been adopted, Colville says it is possible the CRTC will deal with applications for digital licences as current station licences come up for approval.

Michel Tremblay, executive vice-president of the CAB, warns owners of Canada's 495 private stations not to consider the advent of digital radio as the saviour of their industry. It's clear that radio must move into digital to keep pace with the technological environment, he agrees, but that alone won't solve radio's economic difficulties.

"It's going to help by keeping us competitive and opening up new business opportunities, but by itself it's not going to do it because there's going to be a cost for the transition," Tremblay insists. "We have to move on the technology front to ensure the long term. Our view is that we will get

Continued on page 14

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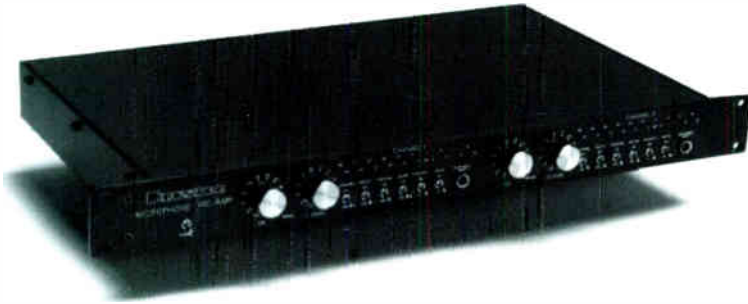
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World Radio History

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through this economic crisis and, in time, radio will get back on its feet."

One estimate puts the per-station cost of converting to digital at between \$50,000 and \$100,000, but that cost will be incurred over a period of years. The Eureka 147 system allows up to six stations to share one transmitter — and to share the cost of installing and operating it.

But while broadcasters, consultants and regulators agree that Canada's rapid move into digital will help, they believe private radio must seek out niche audiences through more diversified programming formats if it wants to improve its bottom line. (see the National Radio Report in the April *Broadcaster*.)

Duff Roman, chairman of the CAB's digital radio task force, shares Tremblay's confidence that DAB can create entire new revenue opportunities for broadcasters through transmission possibilities never before dreamed of.

"My own excitement about digital radio is driven by the high fidelity, CD-quality capability," says Roman, who is also vice-president of industry affairs for CHUM Ltd. "But beyond that, because of the data transmission capability — the things that can be done with 'smart receivers,' I really see an era in the not-too-distant future of sort of portable information-receiving units."

Roman envisions private-sector radio evolving as "the ultimate marketing tool," through receivers equipped with LED readout screens that can display phone numbers and locations of advertisers, information from record labels, surveillance material like weather and traffic reports — even hybrid units that could work as a fax modem.

"To me, there are just so many things when you switch to digital capability that you don't get with analog."

While Shirley Crawford, General Manager of CFBC/CJYC-FM in Saint John, N.B., doesn't expect digital will necessarily be the shot in the arm radio is looking for, it certainly is the radio of the future. Like many other station managers, she has already started installing digital studio equipment.

"As I remember it, I would listen some 20 years ago to very poor (audio) quality, but I don't believe the 18-to-34-year-old group accepts poor quality radio any more," she says. "That generation probably more than any would look at the new technology."

Ron East, president of Cariboo Central Interior Radio Network Inc., which operates eleven stations and six repeaters in British Columbia, believes digital radio "is coming whether we want it or not. Any technological change that enhances the quality of the signal is going to be good for us — even if

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DIGITAL DISSENSION

Industry indecision slows American DAB efforts

▲ Canada had expected the Americans to take the lead in this decade's launch of digital radio broadcasting, but the roles were reversed at an early stage.

"We thought all we had to do was point them in the right direction, stand back and we'd be doing well to keep up with them," says Steve Edwards, vice-president of engineering for Rogers Broadcasting Ltd. recalling a 1990 demonstration of digital radio for American broadcasters and engineers in Montreal. "It's worked out almost exactly opposite — we find that the Mexicans and ourselves are carrying the can for all of North America."

Canada moved into even more of a leadership role when it successfully championed adoption of the high-frequency L-Band spectrum for digital radio at last year's WARC conference in Spain.

The U.S. favoured the existing band used for AM and FM broadcasting, a choice that many believe won't work.

Two years ago the National Association of Broadcasters (NAB), representing owners of close to 11,000 U.S. radio stations, was on the verge of trying to negotiate exclusive North American rights to the Eureka 147 DAB technology, which has been used so successfully in the Canadian tests, says Edwards.

Then the NAB reversed itself in response to a "revolt" by owners of the 6,000 American FM stations, concerned that a successful digital radio system could level the playing field in favour of the 5,000 AM stations — a development that they fear could devalue their FM investments, Edwards adds.

The result of this action was that "the Americans laid themselves open to charges that they were interested only in the money," says Edwards. "The FM guys are controlling the agenda right now and the AM guys are just nervously looking on and wondering if they're being screwed or not."

In fact, says Edwards, the preferred choice of American FM operators is to preserve the status quo and have no digital radio at all, while their second favorite option would be a DAB system that supports FM stations only. But the Federal Communications Commission (FCC) and the NAB aren't prepared to endorse the failure of 5,000 AM stations in order to satisfy the FM operators, says Edwards.

Because of the intense congestion of signals in the AM and FM bands in the U.S., he and other Canadian engineers like Wayne Stacey, a consultant to the Canadian Association of Broadcasters (CAB), are highly sceptical that the Americans can demonstrate that digital transmissions in the In-Band spectrum will come close to matching the performance of the Canadian tests with L-Band.

The ultimate irony could be that American AM station operators might opt for the L-Band spectrum and the Eureka technology favoured by Canada, thus giving them signals far superior to their FM counterparts.

Canadian broadcasters like Duff Roman, the CAB member on Canada's DAB Task Force, are willing to keep an open mind on the chance of an improved performance when In-Band demonstrations take place at April's NAB convention in Las Vegas. But Roman has his doubts.

"They're making all kinds of promises, including both AM and FM mobile demonstrations, but we expected more at the last convention and didn't get it," he says.

Roman adds that the U.S. may find itself an "island" if it presses ahead with use of In-Band, while the rest of the world adopts L-Band frequencies for digital broadcasting.

"What everybody is striving for is a single, world-wide system," says Wayne Stacey. "To an extent, the U.S. is offside with everybody else because the L-Band is a world-wide allocation."

However, Paul Racine, assistant deputy minister of communications, doesn't consider it "absolutely necessary" that Canada and the U.S. share exactly the same digital transmission system. At the same time, he believes it is not in the interest of the U.S. to be all alone with a standard that is incompatible with the rest of the world.

Steve Crowley, a Washington-based engineer who follows the U.S. developments closely, says digital satellite broadcasting appears to be on a fast-track south of the border, unlike Canada, where the focus is on terrestrial transmission tests. Five companies have current applications before the FCC to provide satellite digital services in the 2310-to-2360-MHz "S-Band."

The Electronics Industries Association (EIA) in the U.S. is testing both satellite and terrestrial DAB systems, Crowley says, adding that the NAB has long been opposed to satellite digital

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▲ Michel Tremblay, executive vice-president, Canadian Association of Broadcasters

From page 14



▲ **Duff Roman: Digital radio will be the "ultimate marketing tool."**

the industry were in good shape," East says. "We have an industry that can promote itself very well and it won't take long to educate the public on the benefits of it."

Paul Mills, director of planning and technology for the CBC's English-language radio networks, shares the optimism of private broadcasters about prospects that digital will bring about a revitalization of the industry. When the CBC looks at its own mandate, perhaps the most significant promise digital brings will be the capacity for the CBC to reach every Canadian through satellite transmissions direct-to-home receivers, Mills says, though he acknowledges that this may not happen for 15 years.

Tests of experimental transmitters in the 82-km Toronto-Barrie corridor in December and January demonstrated that the same digital programming can be broadcast by two widely-spaced stations on the same frequency without interfering with each other. This single-frequency-network (SFN) capability could allow broadcasters to extend their coverage into other communities.

It also might make it possible for a motorist to listen to the CBC all the way across Canada without re-tuning the car radio, Mills believes. As an alternative, smart digital car receivers would have the ability to re-tune themselves to the nearest CBC frequency, he adds.

"The possibilities are almost endless," says Mills. "To say that the attraction of digital radio is just better sound quality I don't think is telling the whole story. And if radio starts to capture people's imagination and attention in a bigger way, that's good all around." ■

(Ian Sutton is a print and broadcast journalist and partner in Quasarts Productions.)

From page 14

broadcasting because of the fragmentary effects it might have on local radio. In any case, many different DAB proposals are on the U.S. table.

"And there is still the concern that none of these systems have been tested in a real world mobile environment," says Crowley. "Many knowledgeable engineers think it will be a considerable challenge to make these systems work in the same frequencies as existing FM stations. You just can't have a robust digital signal with that analog signal there."

Though he declines to predict which system will prevail, Crowley doesn't hesitate to give the Canadian broadcasting industry credit for taking the lead in "very concrete and solid research" on digital broadcasting.

"Here those efforts are relatively under-funded," he says. "The (U.S.) government certainly doesn't have much interest in doing the work, so it's pretty much up to the entrepreneurs ... and, with the recession, it's pretty tough to raise money for testing." ■

Ian Sutton

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PEOPLE

TORONTO "CISS-ED" BY COUNTRY

Coffee mugs and chocolate "kisses" were the order of the day when Toronto's first FM country music station, **CISS-FM**, hit the airwaves in late January. Lengthy speculation as to the actual launch date of CISS was finally silenced when press kits, invitations, mugs and chocolates appeared in local media outlets just hours before country crooner, Anne Murray, threw the switch at the station.

The first song to be aired was a tune composed especially for the launch. Called *New Country*, the song featured Canadian country artists such as Prairie Oyster, George Fox, Patricia Conroy and others.



▲ **CISS-FM morning crew**
hosts, **Cliff Dumas and Jane Brown.**

An impressive media campaign immediately followed the launch. **Rawlco Communications Ltd.**, owners of CISS, placed a blizzard of primetime TV ads on Toronto television stations, and further raised awareness with a pervasive outdoor and print campaign. Meanwhile, the "mugging" of Toronto companies continued.

CISS-FM is banking on a relatively original country music format called *New Country*. Developed in the U.S., *New Country* stretches the definition of country music to include "crossover" country-rock musicians and even rock artists such as Bruce Springsteen. A verdict on the format's appeal to the Toronto audience (will A.C. listeners move over to CISS?) will begin to take shape after the winter and spring BBMs.

SUDBURY RADIO/PETRO CANADA FUEL UNITED WAY

Sudbury's **Q92-FM** (CJRQ-FM) recently "pumped up" an effort to gather charity funds

for the United Way. With Petro Canada, the station hosted a charity campaign called *Pump Up The United Way* that netted \$4,000 over three days.



▲ **Q92 morning show host Mellaney Dahl in the "Rock and Roll Air Patrol."**

Petro Canada gas stations in the Sudbury area donated one cent from every litre of gas sold. Meanwhile, Q92 staff promoted the cause by broadcasting live from the various Petro Canada locations.

PEOPLE PROGRESS

Bob McCown is the new morning show host at Toronto's all-sports CJCL-AM — **The Fan**. He leaves his duties as afternoon drive host and host of the Prime Time Sports magazine show.

Replacing McCown is **Don Shulman**. Moving to the noon-4:00 p.m. slot is **Mike Inglis**, while Toronto Maple Leaf game announcer, **Joe Bowen**, moves to the 10:00 a.m. to 2:00 p.m. slot.

Jake Edwards, former morning maestro at Toronto's **Q-107**, (CILQ-FM) has moved back to his hometown of Winnipeg. There, he anchors the morning show at the classic rock-formatted **97.5FM** (CJKR-FM). He is joined by his former Q-107 straightman, Jeff Allan Galbraith — *The Coach*.

Al Campagnola has been selected as the new music director at Toronto's **Country 59** (CKYC-AM). Campagnola relieves the M.D. duties from **Bill Anderson**, who has acted as both music director and program director for the past two years.

Brian Baldry has been elected as chairman of the North American National Broadcasters Association (NANBA) for the 1993-94 term. Baldry is vice-president of engineering at the CBC's engineering branch in Montreal.

KX/96 (CKX-FM) and **CKX** (CKS-AM) in Brandon have been the scene of many

personnel changes of late. **Ray Walker** has moved from from AM morning drive to FM mornings, and has been named assistant program director. **Frank Maguire** has taken over the afternoon drive slot on FM. **Jack Miller** has replaced **Glen Dufresne** for sports reporting, while Dufresne has taken on the marketing duties for the Victoria Cougars of the W.H.L. **John Murphy** is now behind the mic during mornings at CKX-AM.

Norma Beecroft is the new music director at **CJRT-FM**, Toronto's non-profit classical/jazz/educational station. Beecroft is a well-known classical composer who established a national radio profile with the CBC.

Personnel changes at **CJRN-AM** and **CKEY-FM** include: the arrival of **Eric B.** from market-rival CJRN to anchor the morning show at country-formatted CJRN; **Bill Smeaton** now handles mid-days, while **Rob Whitehead** has assumed afternoon drive and music director duties for CJRN. **Scott Sims**, meanwhile, has moved to swing duties for CJRN and is also doing evenings on CKEY-FM.



▲ **CKVR-TV's Sharon Burkhart.**

Sharon Burkhart recently celebrated 10 years at **CKVR-TV**, where her career path has led her to the anchor chair for the station's one-hour dinner-time news package. The latest BBM figures show that about 70,000 viewers tune into the *Total News* package every night.

Well-known Toronto columnist, **Christie Blatchford**, has joined **CFRB-AM** in Toronto, one of the biggest stations in Canada. Broadcast lines have been run into the offices of

Continued on page 17

From page 16

the **Toronto Sun** for Blatchford's commentaries. These are airing twice each day.

NEW AT THE CONTROLS

Martha Fusca, President

Inta Erwin, Vice-President, Stornaway Productions & Stornaway Enterprises, Toronto.

Andrew Alexander, National Sales Manager, For-A Corp. of Canada, Toronto.

Kathie Shearer, General Sales Manager, CTV Network, Toronto.

Mike McConnell, Sales, Magnetic North, Toronto.



▲ **Christian Bouchard**, sales

rep., **Erikson Pro Audio**.

Henry "Hank" Karpus, Manager, TV/Film/Corporate Video Division and Creative Services, Morning Music Ltd., Mississauga, Ont.

Rob McGibbon, Ontario Sales Rep

Christian Bouchard, Quebec Sales Rep, Erikson Pro Audio, St-Laurent, Que.

Becky Posch, Chyron Sales and Product Support, Video Design Systems, Brampton, Ont.

ON-AIR WEST

▲ With items from Bob Dawson, Western correspondent.

Bob Dawson is the media relations consultant with ETC Vancouver, which does the Western Canada promotions and publicity for a number of major motion picture studios. Dawson is an 18-year veteran of both the radio and TV broadcast industries, who says that "there is great value in listening to, and observing, the frequent shifts, groans and spasms that occur within the industry — they are an essential part of its existence."

INTER-ACTIVE RADIO

Morning "zoo keeper" **Dean Hill** has been appointed program director at **LG/73** (CKLG-AM) in Vancouver. He is sharing the P.D. duties with news veteran **Stu McAllister** and **Kate Gorman**, his fellow "zoo mates." **Dana Willard** has been appointed promotions director.

This collective method of making program decisions is likely part of a strategy to lift LG/73 up from the Vancouver ratings doldrums. LG/73 was purchased by Shaw Radio Ltd. from Moffat Communications Ltd. last spring.

Hill says they are "shuffling the deck" at the contemporary hits station by "adding more talk to the programming mix." That talk delves into more controversial topics, while the music remains hit-based, but aimed at females 18-40.

"It's radical broadcasting," says Hill. "Hang onto your hats!"

CHINESE RADIO PUZZLE

On January 13th, 1993 **CHUM Inc.** of Toronto announced that **CHQM-AM** had been sold to a group of unnamed Vancouver investors. The sale was part of a CRTC directive to divest the station in order to complete CHUM's approved acquisition of **QM/FM** (CHQM-FM). CHUM already holds an AM operation in the marketplace (CFUN).

One week later it was learned that Chinese broadcaster **Hanson Lau** would be moving his popular daily *Overseas Chinese Voice* program to CHQM-AM from multicultural station **CJVB-AM**. Even though CHQM-AM now airs Lau's program in the evenings, it has retained its English-language "oldies" programming during the day.

Lau has been the predominant radio voice for Vancouver's Asian community for nearly 20 years. The Asian community now represents more than 25% of the market's population.

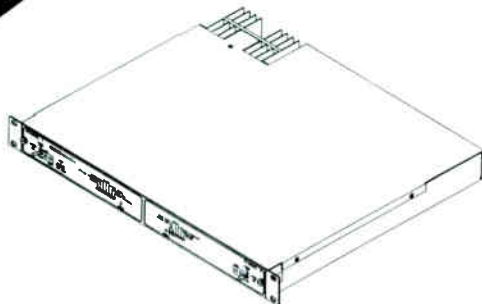
Meanwhile, CJVB-AM, the market's established ethnic broadcast operation, is reported to be wooing heavy-weight Hong Kong talent to replace Lau.

But the question still is... who are the new owners of CHQM-AM?

Continued on page 30

NEW

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DIGITAL VIDEO COMPRESSION SYSTEMS BY SATELLITE: THE TELESAT APPROACH – PART I

Since 1990, Telesat Canada has sponsored an extensive test and evaluation program for Digital Video Compression (DVC), has contributed to the standardization and implementation planning process for DVC in Canada and, in conjunction with other industry members, has assisted in the assessment of the potential impact of DVC on the Canadian broadcasting market.

by Doug Gray,
Frank Franczyk,
Garrick Irvine
(Telesat Canada)
Yiyun Wu
(Communications Research
Center, DCC)

With the recent advances in video source coding techniques and their practical applications to semiconductor technology, the traditional television distribution network is moving from the analog to the digital world. Since most programming is transmitted through satellites to the North American home, either directly or by way of cable and terrestrial distribution, the satellite delivery platform has received most of the attention for compression system development efforts. As a result, tremendous space segment savings are possible for broadcasters and for potential new services or applications which were previously not feasible with analog television distribution.

A description of the technologies and the satellite delivery system considerations for the transmission of compressed video services is provided in Part I of this paper. Part 2, to be published in a future issue, presents link budget details for a TDM digital video transmission system, and provides examples of the resulting Canadian coverage and antenna requirements for C-Band and Ku-Band operation on the Anik E-2 satellite.

The development of video compression algorithms to achieve very low information data rates is one of the most active research areas in the broadcasting industry. This activity has resulted in a market push for the implementation of video codecs in video phones, video conferencing, electronic publishing, digital communication networks etc.

The sophisticated video compression algorithms within the currently developed or

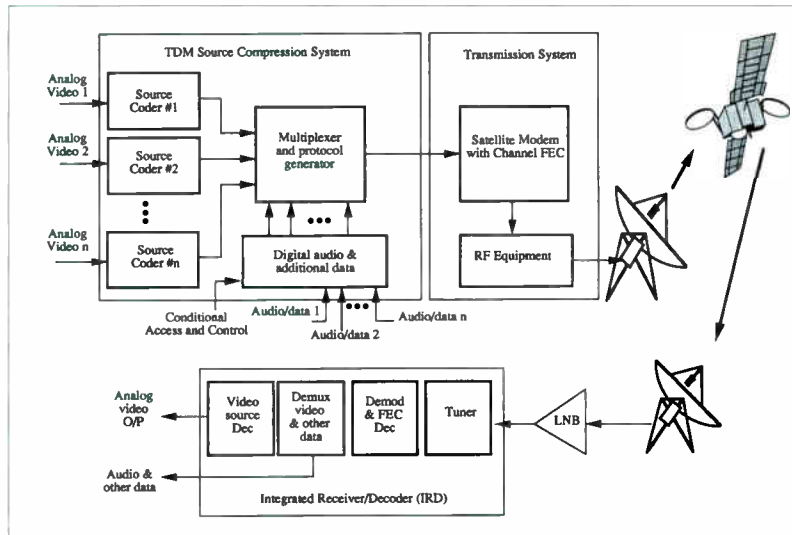


Figure 1: The key components for the transmission of a digital video service by satellite.

proposed video coding systems for broadcast video applications achieve source coding compression ratios on the order of 10:1 to 50:1. Such systems have only now been realized because of processing speed improvements and the availability of Application Specific Integrated Circuits (ASICs) for the demanding requirements of television signal processing. The result of the various video codec implementations, however, are varying degrees of picture definition and associated picture impairments.

The picture impairments for a digital system will be exclusively related to the artifacts generated within the source encoder. In contrast, the resulting picture quality for analog transmission systems is affected by the various linear and non-linear channel and equipment distortions. Operation near the system threshold for analog and digital systems will also be different. The digital system and its FEC implementation results in a 'brick wall' performance characteristic such that the system would not be decodable for a signal level reduced below threshold. For an analog system, operation several dB's below the demodulator threshold will still result in an adequate system with a noisy, but usable

signal.

Standards play an important role in defining a consistent method for interfacing to various equipment and to various signals transmitted over different media with a single generic decoder. Standards also provide economies of scale for the manufacturers who can recover their initial investments through mass production, and in turn provide cost savings to the broadcasters and other users.

In the Canadian context, a recommendation by the Canadian Satellite Users Association (CSUA)

defining a single digital video compression standard has been endorsed by the Advanced Broadcasting Systems Of Canada (ABSOC) and is being promoted to the Canadian broadcast industry and to the Department of Communications. The recommendation promotes a North American (Canadian) source coding standard for the delivery of digital video signals to the home viewer via satellite, cable and over-the-air transmissions. The key objective of the proposal is to achieve transparency in the digital domain which would accommodate the use of a single set top converter/decoder in the home.

The adoption of a uniform standard will be subject to the rapid developments in the video compression technologies as well as to international standard developments. Currently, there are a number of different compression systems available within the marketplace which are based on both proprietary and standardized algorithms. There is also activity within the International Standards Organization (ISO) and the Exchange Carrier Standards Association in defining suitable video compression standards for the various applications.

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SATELLITE DELIVERY ISSUES

Compression intuitively indicates a savings in space segment, either in occupied signal bandwidth or in the effective carrier power. So for the equivalent video quality, a smaller percentage of the available space segment will be used in the transmission of the compressed video signal. A 4:1 space segment compression ratio indicates, for example, that four compressed video signals can be transmitted with the same space segment utilization as that of one analog signal. For the comparison to be fair, the compressed video signals must also include digital audio and other data information within the allocated bit rate since the analog channel carries the audio and additional data within the composite signal.

In addition to the TDM (Time Division Multiplex) mode of transmission, a Single Channel Per Carrier (SCPC) transmission can also be used to transmit digital signals. The most appropriate configuration depends on the type of network and application. The portability of the uplink transmitter is the main consideration in defining the network configuration while the power sharing mechanism is a prime consideration for defining the service and its availability.

The network infrastructure and the service are also influenced by the frequency band selection. The frequency variable is common within all the transmission system equations and inherently defines many of the ground and space segment parameters such as the available Effective Isotropic Radiated Power (EIRP), the link propagation effects, the minimum usable antenna size and the receive terminal's Figure of Merit (G/T).

From the traffic planning standpoint, the geostationary satellite locations and the type of traffic carried within the transponder channels must be coordinated so as to minimize interference effects into the desired traffic. Appropriate coordination of the frequency, the polarization and the footprint coverage characteristics are therefore important in the provision and definition of a network and a service.

SATELLITE TRANSMISSION SYSTEM DESCRIPTION

The key components for the transmission of a digital video service by satellite are shown in Figure 1 for a TDM application. The required facilities include the TDM encoder system and the satellite transmission equipment at the uplink terminal location, and the appropriate antenna and Integrated Receiver and Decoder (IRD) terminal at the downlink. An SCPC system could also be represented by Figure 1 by considering a simpler single channel processor and transmitter at the up-

link and a simpler IRD implementation at the downlink.

The analog video and associated audio and data signals are sourced to the encoding system in analog or in a digital uncompressed format. The multiplexer packages the various input data into an appropriate protocol for interfacing to the satellite modem. The satellite modem prepares the data for the satellite channel by generating redundant data according to some error correcting algorithm so as to improve the signal's immunity to the channel noise and interference effects. The receiver terminal captures the transmitted signal and performs the inverse of the encoding operations so as to reproduce the analog video and associated audio signals.

COMPRESSION SYSTEM DESCRIPTION

The broadcast distribution environment requires that the complexity and cost of the decoder be kept to a minimum. Satellite News Gathering (SNG) and multi-media applications, on the other hand, require variations in the balance of the complexity between the encoder and decoder so as to minimize or distribute the costs. The bottom line for any implementation, however, is an acceptance of the quality of the reconstructed images at an acceptable cost.

In order to achieve high source compression ratios or low bit rates, a considerable amount of the source image data must be reduced. Fortunately, most image sequences contain a large amount of redundant information which could be removed by the encoder and, psycho-visually, would not introduce too much distortion in the reconstructed images. The amount of redundant information in a sequence of images is very much related to the application or type of programming.

Table 3: Present Technology Compressed Video Data Rates

Application	Video Data Rate
FAX	4.8-19.2 kbps
Video Phone	19.2-128 kbps
Multi-Media	64-1200 kbps
Video conferencing	64-2048 kbps
NTSC Film	1.5-5.0 Mbps
NTSC Video	4.0-10.0 Mbps
HDTV	15.0-240.0 Mbps

The range in data rates presented in Table 3 for a given application illustrate that the technology is still developing and that the implementations are not unique. Notice that for the broadcast distribution of film, the compression ratio could be as great as 100:1 whereas it could be as small as 20:1 for video applications involving more detail and more dynamic image sequences. A sports broadcast

would be an ideal example application of the latter.

The tolerable limit for signal compression is also dictated by the application. It is unnecessary, for example, to transmit a broadcast quality signal for video phone or video conferencing purposes since the images are mostly head and shoulders with limited motion and with limited resolution requirements. The image refresh rates may thus be reduced below the standard 30 frames per second associated with NTSC video.

Film material also requires a lower data rate than that associated with an NTSC video source since the film material in its original form was shot at a rate of 24 fps. As a result, there is a large amount of redundant information in the film to video conversion process which may be removed within the source encoder.

SYSTEM BIT RATE

The video source encoder accepts video, audio and data inputs which are processed and packaged into an aggregate data stream per program channel. In a TDM system, a number of these channels are multiplexed together into a larger system bit rate. In an SCPC configuration, the system bit rate is that of the single program channel.

The audio channels associated with the video program (one for monoral or two for stereo) and the Vertical Blanking Interval (VBI) information (including teletext, closed captioning and Ghost Cancellation Reference (GCR) channels) define the basic overall system bit rate. The net overhead data for the additional data services is dependent on the compression system hardware and its implementation.

Some hardware may accommodate additional audio channels and additional data capacity for FAX or computer links while other implementations may provide fewer options. Many source encoding systems also include data encryption and a conditional access system within the final bit stream.

The underlying principle in the discussion of the additional data services is that the information is all digital. The VBI information from within the analog video channel must be sampled and quantized appropriately and transmitted through the link uncompressed. The analog audio signals, on the other hand, can be digitized and compressed using the latest audio compression techniques so as to provide additional savings in the transmitted data rate. In comparison to digital video compression, digital audio compression techniques have matured and can provide transparent Compact Disk (CD) quality at very low data rates.

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TRANSMISSION SYSTEM DESCRIPTION

In a digital communication network, the design objective is to maximize the transmission bit rate through a given channel bandwidth while minimizing the required Energy per Bit to Noise density ratio (E_b/N_0) or Carrier-to-Noise (C/N) for a given average bit error rate. Much of the transmission system optimization is achieved through the appropriate selection of an error correction code combined with an efficient modulation scheme. The system performance and margin above threshold is then determined by calculating the link budget equations for the specific link variables associated with the given frequency band and mode of operation.

To transmit a digital signal efficiently through a satellite channel, modulation schemes with constant amplitudes are desired. This requirement stems from the fact that the satellite channel includes a power amplifier with a non-linear power transfer curve. Operation in the non-linear region with a varying carrier envelope will cause intermodulation interference which degrades the desired signal performance.

The most widely used constant amplitude modulation scheme for digital satellite communication transmissions is Phase Shift Keying (PSK), with Binary PSK (BPSK) and Quadrature PSK (QPSK) being two specific variations of it. Maximizing the modulation efficiency, denoted as bits/sec per Hz, is desired so as to maximize the channel information throughput.

Forward Error Correction (FEC), or error correction coding, introduces redundancy into the source data in an appropriate way to make the data more robust against channel contaminants. The redundant information is analogous to the insertion of parity check bits which are examined at the receiver to identify if the data has been corrupted by a transmission error. The implementation of FEC results in a coding gain for the given channel which reduces the required E_b/N_0 for a given average bit error rate. The tradeoff is that the improvement in error performance comes at the expense of the requirement for additional spectrum due to the overhead information added to the source data stream.

There are two primary types of FEC implementations being used in satellite modem equipment: Block coding and Convolutional coding. A concatenation of a block and a

convolutional code is also possible, but careful optimization is required through an interleaving process so as to maximize the effect of the error correction algorithms. Such is the case for some of the existing proprietary video compression systems, in which the FEC has been implemented externally to the satellite modem.

The benefit of a concatenated code FEC implementation is the tremendous improvement in the error performance for a given E_b/N_0 . The tradeoff to the lower carrier power is of course the additional bandwidth required to accommodate the overhead data. The optimum implementation will maximize both the power and bandwidth utilization for the intended transmission configuration.

For a given probability of error of 1×10^{-6} (1 error in 1 million bits), the implementation of the convolutional Rate 1/2 FEC reduces the required E_b/N_0 by 3.5 dB. The use of a concatenated code further reduces the required E_b/N_0 by an additional 3.5 dB resulting in a very power efficient error correction system, i.e. less than 20% of the original power requirement to achieve the same error rate performance.

MODE OF TRANSMISSION

Multiple compressed video programs can be time-division multiplexed together, modulated and transmitted from a single uplink. This type of scheme is intended for a multi-user access from a major hub or teleport station. On the other hand, each compressed video program can also be transmitted from multiple transmitter stations across the country. The optimum access technique is determined by the application, as there are transmission link and economic considerations which must be examined for the compressed video service configuration.

For the 4:1 compression example discussed earlier, a TDM system allocates all of the transponder power for the aggregate data stream. In the SCPC carrier access, the total power is shared among the carriers. The satellite transponder operating point must therefore be backed off by an appropriate amount so as to minimize the intermodulation interference resulting from the non-linear power amplifier. In terms of receive complexity, the higher channel throughput of the TDM carrier must be handled by a more sophisticated receiver than that which would be implemented with an SCPC configuration. ■



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BUYS AND BUILDS



▲ Recording engineers set sail with Ampex in Vancouver.

AMPEX TREATS ENGINEERS

Ampex set sail with Vancouver and area recording engineers last fall to give them an on-board demonstration of its new 499 Audio Mastering Tape. The Grand Master Gold seminar was held on board the *Gulf Steam II*, and was followed by a lunch and cruise of Vancouver's harbour.

MORE POWER TO CHIN-FM

CHIN-FM Toronto, Canada's only 24-hour ethnic FM station, has doubled its transmitter power from 4,000 watts to 8,500 watts. The station installed a Harris PT4FM solid state transmitter to achieve this jump.

CHIN is Canada's first private station to use this new FM solid state transmitter design at such a substantial power level. It is also the first to integrate this type of transmitter via a combiner with several other tube-type transmitters.

GLOBAL STAKES NEW N.ONT. TERRITORY

Ontario's Global TV opened four new transmitters in northern Ontario in early December. They beam Global signals to North Bay, Timmins, Sudbury, Sault Ste. Marie and surrounding areas.

With the four transmitters, plus nine others in south and central Ontario, 97 percent of the province's population can now receive clear off-air Global signals.

ITV BUCKS RECESSION WITH EXPANSION

ITV (CITV) of Edmonton, Alta. has committed \$1.1 million to a major expansion of its local news gathering capabilities.

Improvements include the use of mobile satellite technology for live news coverage; a new microwave distribution system within the city, including a Livecam; two mobile microwave units; and a Citycam, which delivers a panoramic view of city from downtown office tower.

ITV is also introducing the first live local morning news program to the Edmonton market. *ITV First News* airs every weekday morning from 6a.m. to 7:30a.m.

SIGNAL COMPANIES JOIN FORCES

Rohde and Schwarz have recently obtained distribution rights in Western Canada and Ontario for test and measurement products produced by Lecroy Corp. Rohde and Schwarz also has responsibility for the servicing and calibration of the Lecroy digital storage oscilloscope, pulse generator and arbitrary waveform generator product lines for all Canadian customers.

KRECH MOVES TO MONTANA

Dan Krech Productions of Toronto recently retained the services of Montana Engineering Inc. of Toronto for additions to the company's digital editing facilities. These upgrades included a second edit suite, Kadenza and K-Scope channels and multiple digital disc recorders.

YTV, VISION, CHSN FIRST TO BE COMPRESSED

Three Canadian specialty services are the first major national broadcasters in North America to transmit their signals using digital

video compression.

CHSN converted to the system on Jan. 1, 1993, while YTV will convert to digital compression on May 1, 1993 and VisionTV will follow on Sept. 1, 1993.

The consortium formed by the three services tested and accepted the General Instrument Digicypher compression system. The system uses an encoder configured for 4:1 compression and integrated receiver decoders located at each cable affiliate head end. The signals are being distributed from Telesat's Anik E2 satellite using transponder T3.

OSC/R WINS IN NEW ZEALAND

Toronto's Adelaide Works Inc. has sold an OSC/R film/video data management system to New Zealand's National Film Unit.

OSC/R tracks all the elements of film, video and sound throughout the post-production process. It automatically logs Keycode numbers along with video and audio timecodes during film-to-tape telecine transfers. This "real-time" application minimizes film handling and requires no operator intervention.

MULTICULTURAL TV BUILDS BRIDGES

Two Canadian TV broadcasters have introduced news presentation systems that allow their newscasts to cross language barriers. The essential difference between the two systems is that one translates English for Chinese viewers while the other translates Portuguese, Italian and Chinese for English viewers.

BCTV, Vancouver is the first station in Canada to activate its second audio program to simultaneously broadcast its 6 p.m. news in Cantonese. Viewers can access the translated news by pressing the second audio program on their TV remote controls.

Vancouver's swelling Cantonese population prompted BCTV to introduce the second audio channel option. There are now about 300,000 Cantonese in B.C.

Although well received, the system has also been the cause of some confusion on the part of viewers. "There are too many different makers who handle this second audio switch in different ways," says Tak Negoro, BCTV's vice-president of engineering.

The station has also been on the receiving end of abusive opinions about the system. Some English-speaking viewers have called BCTV to vent their anger after trying to watch the news in Cantonese. "We've heard from

Continued on page 23

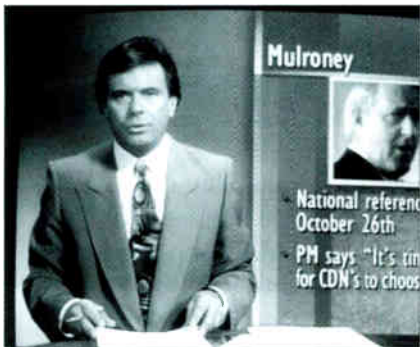
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the rednecks, no question," says station promotions manager **Barry Thompson**.

Meanwhile, in Toronto . . . Hopefully, Toronto broadcaster **CFMT** (Multicultural TV) won't have to deal with the same public relations headache regarding its version of a language bridge. The station has introduced a newscast presentation format that will allow English-speaking viewers to understand the news when its read in Portuguese, Italian or Chinese.

With this format, the newsreader shares the TV screen with a colorful array of graphics and English-language headlines. While the anchor is reading the news in one of those three languages, the approximate English equivalent appears on the right side of the screen, in two or three decks of copy.

CFMT engineers achieved a very stylish presentation of the text by using advanced graphic and character generation systems made by Ultimatte, Infinity and Quantel. Unfortunately, pretaped reports do not include an English sub-text. Once the technology is



▲ **Telediario anchor, Luis Fernandes, shares Portuguese newscast with English headlines at CFMT.**

fully implemented and tested, CFMT hopes to develop a similar system that will allow the viewer to "read" a pretaped, edited report.

Aware that CFMT might be accused of "going English", management firmly points out that newscasts will continue to be aired in their original language —English headlines only serve to enhance the service. *Angela Bianchi*.

CALGARY GETS NEW AM VOICE

Calgary's newest radio station, **XL Radio** took to the airwaves in the fall of 1992. The AM outlet is broadcast at 1140kHz and is owned by **Golden West Broadcasting Ltd.** XL Radio has a easy listening AC skew, featuring artists such as Neil Diamond, Kenny Rogers and Rita MacNeil.

Staff includes "Gentleman Jim" Jackson, morning drive shift; Jackie Hall, 9a.m.-2p.m.; Woody Rae, 2-6p.m.; Greg Shannon and Pete Martin, evenings and weekends; Dawn Buffam, weekends, noon-6p.m.

TAPE TRANSCRIPTION COMPANY LAUNCHED IN VANCOUVER

Sound-Off is the name of a new videotape transcription service launched in Vancouver by **Western Captioning Ltd.** The company is equipped to transcribe the audio portion of most videotape formats, including professional 1", 3/4", VHS, Beta and 8mm camcorders.

Sound-Off was launched in answer to an increasing demand by corporate and government customers for printed versions of videotaped seminars and meetings.

CABLE COMPANIES OPT FOR ROSS SWITCHERS

Glentronix has sold 10 Ross Video RVS216A and RVS210A switchers to cable

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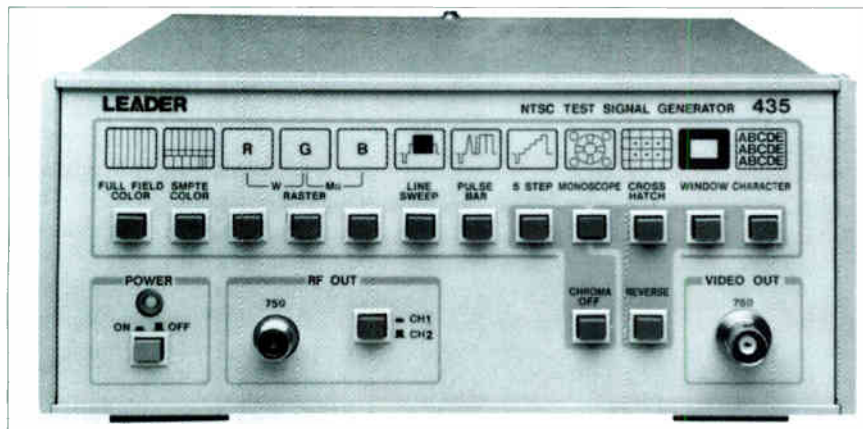
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NEW PRODUCTS



▲ **Leader model 435B high resolution TV test generator.**

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For more information contact *Omnitronix Ltd., 2180 Dunwin Dr., Unit 1, Mississauga, Ont. L5L 1C7 or circle 125 on reader service card.*

Trompeter Electronics Inc. is pleased to introduce, free, its new, expanded 96-page T18A Catalog. This catalog includes details on video jackfields, coax/twinax/triax and quadrax connectors, adapters, jacks, plugs, patchcords and more.

For more information contact *Promark Electronics Inc., 6161 Cypriot, St-Laurent, Quebec or circle 126 on reader service card.*

Ensemble Designs has introduced a 10 bit NTSC digital composite keyer, called the **Catalyst**. It is the perfect complement to any suite with an analog switcher and D2 and D3 VTR. The keyer's clean, transparent signal enables you to take full advantage of pre-read for flawless layering in the digital domain.

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I/O: serial I/O as an option.

For more information contact *Video Design Systems Inc., 10 Wilkinson Rd., Unit 22, Brampton, Ont. L6T 5B1 or circle 127 on reader service card.*

The new **A83 component digital switcher** from **Abekas Video Systems** is the companion product to the Emmy Award-winning A84 compositing switcher. The A83 features three mix effects modules and exceptional keying quality. Designed for post-production and broadcast applications, the A83 offers user-definable inputs, signal system networking, ASPIK™ (Adaptive Sub-Pixel Intelligent Keying), internal digital disk recording, and LINC™ systems integration software.

For more information contact *Actra Technology Group Inc., 100 Leek Cres., Unit 6, Richmond Hill, Ont. L4B 3E6 or circle 128 on reader service card.*



▲ **Panasonic's D-3 1/2-inch digital portable VCR, model AJ-D320.**

Panasonic Broadcast and Television Systems announces the availability of the first D-3 1/2-inch Digital portable VCR, model AJ-D320.

Optimized for field applications, the system also features a composite serial digital input, menu set-up, large LCD indicators, built-in time code reader/generator (including VITC), auto backspace edit function, 16x fast

forward and 5x reverse search speeds with colour, auto head cleaning, built-in diagnostics and record review function.

For more information contact *Matsushita Electric of Canada Ltd., 5770 Ambler Dr., Mississauga, Ont. L4W 2T3 or circle 129 on reader service card.*

StudioHeart is a brand new PC-based edit controller in a windowed graphical environment. Answering the call for a professional edit controller with both linear and non-linear capabilities, StudioHeart combines the best of industry standard keyboard control with the power of mouse and menu operations.

The design of StudioHeart is intended to ease the transition from linear to non-linear technologies. The soul of StudioHeart retains



▲ **StudioHeart's PC-based edit controller.**

the best of existing VTR control technology, while insuring upward compatibility with the newest development in digital post production. Videotape editors who are comfortable and proficient with existing technologies need not learn a whole new way of editing. StudioHeart provides a familiar "front end" while offering expanded editing tools and techniques.

For more information contact *Strassner Editing Systems, 10419 McCormick St., North Hollywood, CA 91601 or circle 130 on reader service card.*

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CSUA Conference Investigates Satellite Technologies, Issues

If the early-March CRTC TV "structure" hearings leave your head spinning with references to compression ratios and standards, C and Ku bands, etc., some informational relief may be found at the **Canadian Satellite Users Association** conference and trade show. The CSUA conference and show will be held at the Toronto Airport Hilton Hotel, **March 18-19**.

Although unintentional, the dovetailing of the CRTC hearings with the CSUA conference "will provide an ideal opportunity for an open discussion of the issues, for which the CRTC hearings do not have the facility," says **Don Braden**, executive director of the CSUA. "We want to show satellite service users which of the new satellite technologies are smoke and mirrors and which are for real."

Indicative of this are presentations by some of the key players in the burgeoning satellite industry, including **Lawrence Chapman**, director DBS at **DirecTV**. This American company is working with Hughes Technologies to perfect one of the direct-to-home satellite services that will soon be beaming DBS signals into both the U.S. and Canada. "We believe DirecTV will be forthcoming with their plans, as they will likely start marketing their services soon," says Braden. DirecTV has been relatively frank in discussions of the compression technologies involved with its DBS service, but less so on the subject of programming sources, says Braden.

DirecTV and other American DBS services will be the principal concern of a session on Canada's policies and regulations for satellite broadcasting. It will feature a presentation by **Peter Grant**, a leading specialist in communications law.

The Americans are not the only ones blazing DBS trails. Conference attendees will also hear from the **YTV-CHSN-Vision** consortium of specialty services, regarding its ongoing conversion to compressed digital video transmission systems. They will also hear from **Telesat**, which is currently piecing together its own direct-to-home satellite service for Canadian broadcasters.

Of particular interest, says Braden, are the final "plenary" sessions. The **CTV** Olympic broadcast team will describe the job of delivering the Summer Games by satellite, while representatives from **Iridium-Motorola** will describe the newly-proposed "personal" class of satellites, to be used for secure phone communications.

The CSUA conference will be accompanied by a trade show, which will be open on both March 18 and 19 at the Toronto Airport Hilton Hotel. Exhibitors such as Teleglobe, Telesat and Cancom have been confirmed for the trade show.

Future Bright for Interactive TV

A report released by English research company, **Frost and Sullivan**, points to better economic times for the interactive television industry. The researchers say companies participating in this industry sector can expect at least an upturn in business and at most a boom in growth.

An American report used by Frost and Sullivan says "virtually every major company that is involved in the fields of consumer electronics, television production and broadcasting, cable TV, professional video equipment, telecommunications or computers sees interactive TV as a key to its future growth."

The U.S. study reported that U.S. interactive transmission and service revenues totalled \$681 million in 1991. Frost and Sullivan forecasts growth (in constant 1991 dollars) to about \$1.65 billion in 1996.

One of the reasons the market is poised for explosive growth, says the English report, is that broadcasters, cable-TV companies and telephone companies all see interactive TV as a means for expansion into each other's territory. They also see such cross-territorial competition as their biggest hope for increased revenues. With increasingly fragmented revenues, broadcasters in particular will be turning to interactive TV for revenue relief.

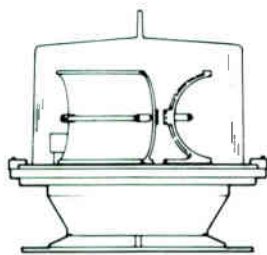
Most of the present market for interactive TV consists of just two areas, says Frost and Sullivan: pay-per-view programming via cable and interactive satellite networks used in business and education. These two forms will still dominate the market by 1996, but vendors of consumer hardware devices or home interactive terminals can also expect growth.

A recent example of this is the interactive "shopping" system developed by **TV Answer** of Virginia. TV Answer has produced a "Home Unit" designed to bring a variety of shopping opportunities to the user's television screen. The company has already struck agreements with 15 firms, including JCPenney and Domino's Pizza, for use of the system, even though it still awaits licensing approval by the FCC.

Continued on page 28

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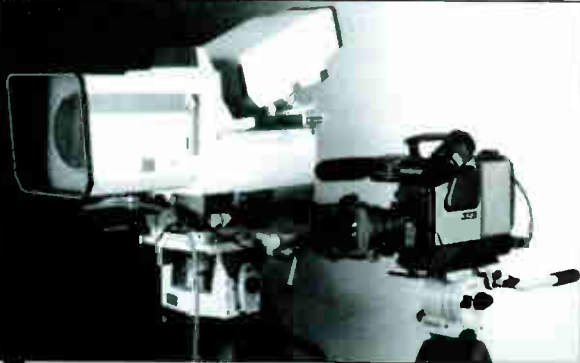
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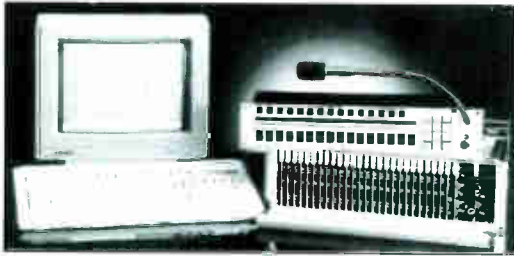
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The HK-343/HL-43 is a studio/field camera developed with emphasis on ease of operation and exceptional performance versus cost ratio. Featuring 2/3-inch IT CCD sensors with low smear and reduced FPN (fixed pattern noise), the HK-343/HL-43 relies on innovative technology SHBA (Super High Band Aperture) to achieve 850 lines of horizontal resolution.

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UPDATE – RADIO

CHUM Accepts Windsor Market Challenge

► A change in TV station ownership is not all that's changed in S.W. Ontario's media. In a landmark decision, the **CRTC** gave its blessing to the sale of two radio stations in Windsor to CHUM Ltd. of Toronto, giving **CHUM** an unprecedented *four* stations in that market.

Only the fierce competition for radio advertising by American stations in the Detroit area allowed the CRTC to relax its ownership concentration rules, which prohibit ownership of more than one station *of the same type* (eg. FM or AM) in the same market. CHUM bought **CKLW-AM** and **CKLW-FM** for \$1.75 million from **CUC Broadcasting Ltd.** CHUM already owns **CKWW** and **CIMX-FM** in Windsor.

CUC added a note of desperation to the proceedings when it told the CRTC that the stations were money-losers and that "it may be obliged to cease the operation of CKLW and CKLW-FM" unless the deal was approved.

In its decision, the Commission acknowledged that "the intense competition from Detroit makes Windsor a unique market for broadcasting," and that these circumstances "warrant an exception to the Commission's ownership policy." The Windsor market receives up to 150 radio signals, mostly from the U.S.

The CRTC agreed that the four stations will be able to operate more economically under one owner, especially as that owner is powerful CHUM Ltd. For example, CHUM says it will operate one news centre for all four of its Windsor stations.

The Commission also relaxed some of its programming rules for the stations, while strengthening others. For instance, the restriction on the number of hits aired by CKLW-FM was lifted, as was the restriction on its choice of programming format. However, the CRTC increased the CanCon requirements for CKLW-FM from its current level of 12% to 20%.

programming elements in order to streamline their operations. The programming exchange will make **CHWO-AM**, Oakville Canada's first full-time 50+ radio station, while making **CJMR-AM**, Mississauga the newest ethnic radio station in the Toronto/Hamilton area.

On March 1, CHWO switched to a full-day program schedule of its *Radio To Remember* format, consisting of everything from big bands to Sinatra to Elvis. CJMR then took over most of CHWO's ethnic broadcasting schedule, which it had maintained as part of its English-language music and information format since 1956.

CJMR's schedule had previously been "somewhat eclectic," says a release, featuring local information, ethnic programming, religious programming, sports coverage and AC music. With the exchange, at least 60% of CJMR's programming will be directed to a minimum of 11 cultural groups, with at least 15 languages between them.

Canadians Invade Russia

Can't get a job in radio or TV? Why not shop your resume around at that cold, once-Communist country just east of here.

That's what **Sandy Wolofsky** did last year after graduating from an American college and failing to find a job with the Montreal media. Instead, she sublet her Montreal apartment and caught a plane for **Moscow**.

There, she got a job as a radio announcer, broadcasting in English on a sometimes on-sometimes off station called Radio Maximum 103.7 FM. Wolofsky not only hosts the week-end morning show there, but also writes for the *Moscow Times*, one of three English-language newspapers in Moscow.

"It's a country without infrastructure or laws," she says, "but there is an incredible energy there."

Speaking of energy ... a Canadian entrepreneur is relying at least partially on the powers from above to help him launch the first commercial Christian radio station in Russia. **Radio Teos** is located in St. Petersburg, the second largest city in the once-"godless" republic.

Radio Teos is owned by **Dr. Robert Lowe** of Toronto, who was granted permission to use the St. Petersburg radio facilities after they were abandoned by the Russian military. Lowe founded the Becker's chain of convenience stores in Canada, of which he was president while it grew to include over 700 outlets.

Heritage Media Sales of Oakville, Ontario, is the advertising agency for Radio Teos, as well as for CJMR, Mississauga, Canada's biggest religious radio broadcaster. Heritage will sell the advertising merits of Radio Teos based on a population numbering 10 million in the St. Petersburg area.

Continued on page 29

Montreal FM #1 In The Nation

Step aside, CFRB. **CKOI-FM** has inherited the mantle as Canada's most-listened-to radio station. A release from the station says CKOI gathered 1,111,400 listeners in the fall **BBM** survey, topping CFRB's total weekly cumulative number of 993,600 listeners. This is the fourth consecutive time the Montreal broadcaster has earned national first-place audience numbers, says the release.

Beautiful Music Bounced At Oshawa FM

The Beautiful Music format at Oshawa's **CKQT-FM** was chased out of town in early February, as were the station's call letters. The Durham county broadcaster is now officially named **CKGE-FM**, but station management would prefer listeners recognize it as "The Edge." CKGE now programs a "Hot AC" format, conceptualized and created by v.p. programming, **Lee Sterry** and program director, **Dale Parker**.

"We were getting great audience numbers for CKQT, but 80% of the listeners were outside of the Durham region," says Sterry. "Our surveys of listeners and advertisers in Oshawa and the area showed that hot AC was the preferred format."

CRTC Says 'Yes' To Programming Exchange

The CRTC has approved applications by two Ontario radio stations to exchange certain

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From page 28

Survey Says DeeJays Dedicated But Poor

Male. Anglophone. 33 years old. Has 13.7 years of education. Is working at a large Ontario radio station. Held 3.7 announcing jobs over a 10.6 year career. Spent 20 months in each of first 2.7 jobs and 6 years in current job. Income: \$33,824.

A classified ad? No, actually it's the profile of a typical Canadian radio announcer from a study conducted by professor **George Pollard** of Carleton University from his book *Hangin' In* — an analysis of Canada's radio announcing workforce.

The title, as author Pollard explains, comes from a general impression that "about 70 percent of the respondents are just 'hangin' in'. They love the work, they always wanted to do it and they want to continue doing it — but they can't. It doesn't pay very well, there's not much job security and they don't feel very well treated.

"I think the professor has part of the story right but he doesn't have the whole story," comments **Don Shafer**, former G.M. of Toronto's Q107 and AM640. "If an announcer is making little or no money, and he or she feels they are in dead end job, I would blame

the announcer, not the industry."

Pollard's study was undertaken with a belief that announcers are highly regarded by listeners, both as information mediums and opinion leaders. This, he says, is supported by over 100 radio audience studies he has conducted over the past 20 years. It was because of this powerful image that Pollard determined that an industry-wide character study of radio announcers was warranted.

"The book started out as strictly a workforce analysis which would be used for university level courses in work and occupations, or possibly industrial sociology," he explains. "What it evolved into is a source for broadcasters as well as those in community colleges who may or may not be training for those jobs."

Data was gleaned from 695 questionnaires, each containing 128 questions. The questionnaires were mailed to a national random sample of private sector radio announcers in January 1991. The sample attempts to fairly reflect Canadian radio industry in terms of small, medium and large markets, AM and FM stations, French and English stations and, of course, gender.

By the end of March '91, about 53% of the sample had completed and returned the sur-

vey. This, says Pollard, serves as the most extensive and reliable information source ever amassed on this subject.

Other profile information on the typical announcer includes:

- the total average income of \$33,824 is the sum of \$28,986 full-time wages, plus \$4,838 in freelance earnings.

- radio stations are composed of an average of seven full-time and 3.5 part-time announcers.

- there is a shortfall in numbers of middle-aged and older announcers.

- work satisfaction is high.

- a belief that radio stations are a good places to work.

- announcers have little reliance on formal authority.

Disturbing findings for Pollard concerned the female announcing workforce. His data revealed that:

- women earn about 65 cents for every dollar earned by a man.

- women announcers have less professional work experience than men.

- women constitute about 21% of the Canadian announcing workforce.

Pollard's book was published in the fall of 1992. *Ted Loviscek* ■

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From page 17

CHILLY ASSIGNMENT

Ever one to spot a good promotional opportunity, the fox from **The Fox** (CFOX-FM), Vancouver even braved the frigid



▲ The Fox dances with man in suit to stay warm on New Year's Day.

waters of English Bay in the name of station publicity. He and another one-thousand "thrill" seekers hit the surf on New Years

Day, much to the delight of over 10 thousand onlookers. The man in the fox suit actually dove in head-first. That's dedication!

"DID YOU SAY SNOW?..."

BCTV's marketing team scored a successful promotional coup when they conceptualized the "Rainbeater" campaign. Thirty national advertisers jumped on board for the contest-based campaign, which showed visuals from a typical rain-filled West Coast winter. Advertisers would sponsor trips to inviting sun-spots for the sun-starved winners of the contest.

Mother Nature subsequently threw a curve ball at the Rainbeater promotion. In the middle of the campaign, a renegade arctic front arrived from the north, plunging the market into three weeks of bright, sunny, below-zero weather. Not a drop of rain was to be seen.

NEW AT THE CONTROLS

Ted Chernecki, Reporter, BCTV, Vancouver (formerly with CBC-TV).

Jim McLaughlin, General Manager, CISL-AM & Z95.3 (CKZZ-FM), Vancouver (formerly with Moffat).

Erin Redden, Promotion Manager, CISL-

AM & Z95.3 (CKZZ-FM), Vancouver (formerly with B.C. Lions).

Audrey van Bruchem, Controller, IQ (CKIQ-AM), Kelowna.

Scott Barratt, Morning Drive Announcer, JR Country (CJJR-FM), Vancouver.

Bruce Davis, General Manager, CJCA-AM & K97 (CKKS-FM), Richmond.

GONE WITH THE WIND

Harvey Gold / Western World Communications

Bill Waddington / GSM / CISL Vancouver

John Beaudoin / P.D. / CHRX Vancouver

Marianne Jaromi / Morning Team / 97

KISS FM Vancouver

Harold Kendall / Music Director / CKWX Vancouver

Henry Brilz / P.D. / CHUB Nanaimo ■

From page 23

systems owned by **Maclean Hunter, Rogers and Trillium**.

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D-3 EARNING

INTERNATIONAL SALES

Three TV broadcast organizations from around the world have recently purchased **Panasonic** D-3 video components.

USA Networks bought four digital M.A.R.C. automated record/playback systems equipped with 70 D-3 VTRs, valued at about \$7.5 million. USA Networks is made up of two cable entertainment networks, including the Sci-Fi Channel. USA Network shows reach more than 60 million homes in the States.

Antena 3, a private broadcaster in Spain, has opted for 22 D-3 VTRs and 3 D-3 DSP cameras. The equipment is now being installed in a new studio and will be used mainly for post-production work.

The **Singapore Broadcasting Corp.** has made a purchase of 16 D-3 composite digital VTRs. This marks the third purchase of D-3 VTRs by an Asian broadcaster. ■

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SATELLITE DOWNLINKS. Comlink offers a range of options, including the Andrew GT series 4.5-meter steerable antenna, popularly known as "the cherry picker".

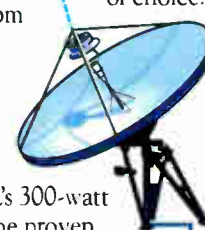


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