

Memory Book

CN Participation
in Expo 86, Vancouver.

Album souvenir

Le CN à Expo 86,
Vancouver.



CIRCULAR MOTION

The circular motion exhibit used a hula-hoop to demonstrate circular motion as it rotated around and up a nine metre high mast. Electrical energy produced as the six stationary bicycles were pedalled was fed to a motor which was connected to cause rotation of the conical base. The mast itself did not spin but, being mounted off-centre described a small circular orbit always facing the same direction. That motion, combined with the aerodynamic shape of the hoop, caused the hoop to rise, and the faster the cyclist pedalled, the faster the hoop rose (wet and windy days excepted!). The circular motion of the hoop was maintained by the forces applied at the point of contact between the mast and the inside edge of the hoop.



OSCILLATORY MOTION

Oscillatory motion is any motion which repeats itself in cycles, like the sound waves in telecommunications or a pendulum on a clock. To demonstrate this, the design team developed the four-storey high exhibit in which up to six people worked cooperatively with joy sticks to assist or impede the movement of the green ball up and down the mast. This was the only exhibit that was paired - the two bouncing balls moving independently of each other.

At rest, the ball remained at the centre of the mast. When an impulse from the game console disturbed it from rest, a restoring force of a spring acted to pull the ball back toward the centre i.e. to vibrate or oscillate. The object of the game was to get all operators to work their joy sticks in unison and get a ball moving from rest

up to the maximum and down to the minimum, in the least amount of time. This usually took 5-8 seconds with good operators and 20-30 seconds when operators were not in unison.



UNIFORM MOTION



The uniform motion exhibit, 16 metres high, made use of a falling parachute to demonstrate constant speed in a straight line. Visitors hand-cranked the parachute to the top of the mast, where it was released to descend at a uniform speed of two metres per second - the force of gravity being offset by air resistance to the parachute.

Bands of lights on the mast were spaced two metres apart so that with each passing second, another band rhythmically lit up as the parachute dropped past.

ACCELERATED MOTION



By spinning large disks, guests could raise the bright red cube to the top of the four storey wedge. One person could raise it in 60 seconds, while six persons could achieve the same result in 10 seconds. Accelerated motion was demonstrated as the cube returned down the face of the wedge, accelerating as it fell, until it was slowed down near the end of its fall.

TIMELINE

The extensive "Timeline" showed, chronologically, the evolution of transportation and communications since 1800, and related its milestones to those of the world's social, cultural and commercial development. The montage of 19 panels, each a metre wide, stood along the north side of the pavilion. Each panel encompassed one decade and contained as many as 50 images from various historic collections, as well as from books, magazines, newspapers, paintings and prints.

One of the historical events highlighted was the 150th anniversary of Canada's first public railway operation - the 23 km long Champlain and St. Lawrence Railroad. This railway, in 1836, became a link in the busy traffic route between Montreal and New York City, and now forms part of the Canadian National system.





CN THEATRE

CN PAVILION





J. Maurice LeClair

Président du Conseil et
Chef de la direction

Chairman and
Chief Executive Officer

Canadien National
C.P. 8100, Montréal
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Box 8100, Montreal
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Le 14 octobre 1986

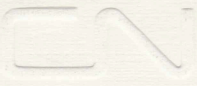
AU Personnel du Pavillon CN
 Personnel du Cinéma CN
 Personnel de la Police CN

Vous avez survécu à l'Expo 86. Grâce à votre engagement, vous en avez tiré une expérience unique qui ne se présentera probablement pas de votre vie. Et on me dit que vous avez joué un rôle de premier plan en faisant en sorte que le Pavillon CN et le Cinéma CN fassent courir les foules à Vancouver.

Dans les circonstances, je voudrais bien que vous demeuriez au sein de la grande famille du CN, mais le climat commercial et la situation financière de l'entreprise nous en empêchent. C'est d'ailleurs le cas de nombreux autres membres du personnel du CN.

Nous avons toutefois contracté envers vous une dette de gratitude que nous ne sommes pas prêts d'oublier. Vous avez accepté de vous joindre à une équipe du tonnerre et avez réussi à conserver votre attitude positive jusqu'à la toute fin.

Au nom des administrateurs, de la direction et du personnel du CN, je vous félicite de votre beau travail et vous souhaite beaucoup de succès dans l'orientation future de vos carrières.



J. Maurice LeClair

Chairman and
Chief Executive Officer

Canadian National
Box 8100, Montreal
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Président du Conseil et
Chef de la direction

Canadien National
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October 14, 1986

TO CN Pavilion Staff
CN Theatre Staff
CN Police

You survived Expo. And from what I hear you thrived on it. All reports indicate that you played a key role in ensuring CN's Pavilion and CN Theatre were hits at Expo 86.

I wish we had jobs open to keep you all on the payroll, but times are not so good for CN on the business and financial side. Unfortunately you'll be joining many other ex-CN employees.

Nevertheless, I hope you regard your CN experience as good experience. You came together as a team very quickly and maintained your smiling enthusiasm right to the end.

On behalf of all CN's directors, officers and employees, I congratulate you and thank you for a job very well done.

Sincerely,

THE INCOMPLETE DO-IT-YOURSELF MANUAL ON EXPO PARTICIPATION
BY LORNE PERRY

Back at the beginning

Work on CN's participation in EXPO 86 began in March 1982, when the first step was not to decide on whether to be in, or what to say if we were in; but rather, to find out if we could possibly stay out! World Fairs take large blocks of money that were and are scarce for CN.

Of course, we soon found out that a transportation world fair being held in Canada was an absolute must for CN. The only other time we were ever similarly involved was in 1967, when a first category Universal and International Expo was held in Montreal.

Setting the limits

The next step was to find out just what scale of operation we should look at. Management and the Board cannot give this kind of direction without some idea of

1. Expo's plans.
2. What other potential participants are thinking.
3. What you get for what money.
4. What kind of show CN might mount.

So a series of papers was developed for management and the Board through '82 and with '83. Meanwhile, we announced our intention to be an exhibitor, in some form or other.

The very first theme paper carried the words "Carrying Things", and that idea held up through all subsequent permutations.

At one point the CN Theatre at Canada Place was to be our

only participation, but when the Vancouver community reacted loudly, a steering committee led by Ross Walker, Senior Vice President, Western Canada, recommended a CN Pavilion on False Creek, the main EXPO 86 site. The proposal was adopted by the CN Board and it was decided to go ahead with both the Pavilion and the IMAX 3-D Film.

EXPO had held the location open where they thought CN should be, and we agreed with their choice.

Budget limits were set and a line of authority established. The whole project was the Chairman's responsibility, delegated jointly to R.A. Walker, because of Western Canada's interests, and Dave Todd, because it is basically a communications project.

I became the project officer under both leaders.

Gathering a Team

Design, Project Management, Architecture, Graphics, Entertainment, Audio-visual all required immense creativity and attention to detail.

The team leadership came from Gallop & Morin Lessard McInnis as overall project managers. They also undertook several specific design tasks including the development of the Timeline, the motion exhibits and the interactive video displays.

Architect Peter Cardew was selected by means of a competition conducted in Vancouver in March 1984. The major contractor for the building, Turnbull and Gale was selected by a tender process.

Under Gallop & Morin, etc., a creative team was gathered from Halifax, Montreal, Toronto and Vancouver, incorporating such diverse skills as archivist, history professor, science professor, exhibit designer, film animator, film producer, theatrical impresario, graphic designer, architectural designer, design engineer, scenario writer, theatrical designer and more.

Meantime, all through 1984, Canada Harbour Place Corporation was busily gathering a team to realize the CN Theatre and a 3-D IMAX film. In addition to bringing money to the table, CN brought overall theme direction and considerable input on the content. IMAX Systems Corporation was an essential partner for the 3-D camera and projection technology as well as ably advising the building architects about the particular requirements of an IMAX theatre. National Film Board came up with the idea of the 3-D film in the first place so their participation was guaranteed from the outset.

For Canada Place, the CN Theatre project was directed by Bruce Smith, Senior Vice-President - Finance. Sounds like an unusual title for an executive producer, but he brought to the project every necessary skill and area of judgement. His contribution to its success cannot be over-stated.

Building a Show

The storyline process for Transitions was steered by Colin Low of NFB with assistance from a number of talented people.

The toughest part was balancing all the objectives. Canada Pavilion wanted the film to emphasize Canadian prowess in high technology with a bias towards western Canada.

Canada Place wanted entertainment plus education. CN wanted its corporate interests protected but not overdone. The end product was one of the neatest tricks at EXPO. Superb entertainment, lots of high tech, lots of western Canada, plenty of new information and just enough evidence of the sponsor.

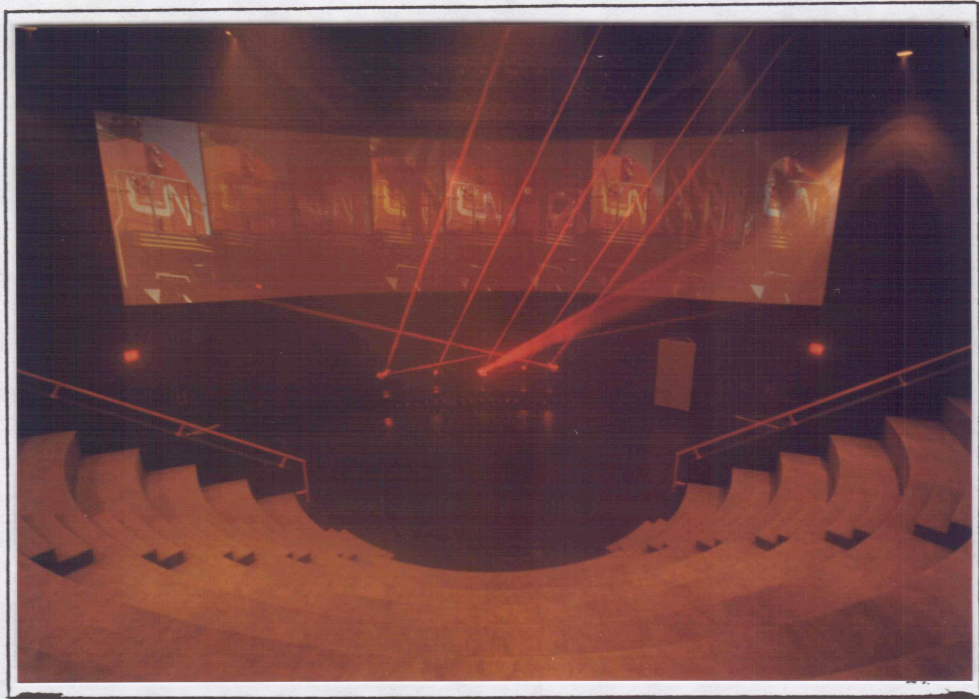
1985 was a year of intense preparation for the big show. Filming was undertaken for Transitions (first shots in October 1984) and for locoMotion. Exhibits were under construction and testing. Thousands of slides were selected for locoMotion. Film animation, building construction, sign design, uniform design and manufacture each required meetings, approvals, discussion, requisitions and so on and on.

The two end products came together in time for the grand opening of EXPO, but in the case of the Pavilion it was a near thing. It's all very well to have a critical path but when you wait a month for a dry day to install the pool lining, wait until a week before opening to redesign the theatre decor and acoustics, wait for a floor to be finished before you can install scaffolding to place lights, it gets a bit dicey.

But construction projects tend to be like that. The point is we made it, the critics liked it, and the public fell in love with it.

For me, it was a good project all the way. Especially working with such a good design and construction team, and an operating team second to none.

locoMotion



One of Canada's leading actors, Gordon Pinsent, and award winning Canadian director, John McGreevy, whom Peter Ustinov chose to film his documentary, "Peter Ustinov's Russia", because "I trust him", joined forces to produce "locoMotion", shown in the CN Pavilion Auditorium.

Pinsent not only played host, Track-Man, in the 15 minute mixed media presentation, he also played all the roles in the show, taking the viewer on an amusing and intriguing review of CN and its place in Canada - yesterday, today and tomorrow.

SHOWING AT THE CN THEATRE

TRANSITIONS - AN IMAX FILM IN 3 DIMENSIONS

British Columbia's spectacular Fraser River Canyon was one of about 20 locations across Canada used for the filming of the world's first three-dimensional IMAX film. "Transitions" was produced by the National Film Board under the sponsorship of CN and Canada Place, and was shown in the 500-seat CN Theatre throughout EXPO 86.

The 20-minute film sketched the history and future of how goods and messages are moved about, with scenes ranging from voyageurs in birchbark canoes to the high technology of satellite communications. Thanks to the 3D effect of a "double camera" technique developed by the NFB in cooperation with IMAX Systems of Canada, the Fraser Canyon segment showed a freight train rushing into the 500-seat CN Theatre, and then gave the audience an engineer's-eye view of the unique surroundings.

Other locations across Canada selected by director Colin Low were Halifax Harbour; Sherrington, Montreal, the Laurentians and the Gatineau in Quebec; Vegreville, Leduc, and Edmonton in Alberta; and the White Canyon in the Rockies as well as Hovel Bay and Vancouver in British Columbia.

The filming was done by two 70-mm cameras related to a 50/50 mirror in such a way that one recorded through it while the other received a reflected image, their perspectives separated just like those of human eyes. To align the images into a single three-dimensional one, viewers were supplied with polarizing glasses.

During filming, the "double camera" was supported by a hydraulic boom and kept absolutely stable by a computer-controlled gyroscope. Instead of a viewfinder, the cameraman used closed circuit television to monitor scenes, and had remote control over camera movements.

In the Fraser Canyon, as during many of the location "shoots," the 600-kilogram assembly was mounted on a flatcar. Every day for a week, one of CN's state-of-the-art SD50 locomotives, No. 5400, pushed that car and another, carrying an NFB equipment truck, from Boston Bar to a siding in the canyon where the camera lay in wait to capture passing trains. On one occasion the camera rode inside the cab, looking over the engineer's shoulder.

When "Transitions" was shown at EXPO 86, audiences saw the kinds of needs which lead to things being carried, and how those needs are satisfied. And they saw teddy bears leap off assembly lines and eggs break into their laps.

They were also reminded of how things were carried in the past when an exact replica of a locomotive which was built in Dundee in 1849 for Canada's first railway, the Champlain and St. Lawrence, dashed toward them at a breath-taking 40 km an hour. And they got some idea of things to come in a free-ranging series of computer-generated images which visually introduced the communications network of the future.

MOTION EXHIBITS

The overall theme of CN's exhibits at EXPO was "Carrying Things" - a phrase that sums up the company's vast and complex transportations and communications network.

Visitors had an opportunity to play with four huge and brightly colored motion exhibits and in the process explore the principles of basic types of motion.

INTERACTIVE VIDEOS

Interactive and bilingual video banks, three sets of screens in each, were located alongside each of the motion models. Each set had a six-minute program about the basic form of motion being demonstrated, and could be used before or after visitors had operated the models.

The narrator introduced a brief demonstration of a law of motion and then offered the viewer an animated or computer graphics explanation. Choices became tricky when the operator was challenged to select from among several visuals, the best example of that form of motion and thus earn points toward a final score.

CN STAFF UNIFORMS

CN Pavilion staff wore uniforms designed by Feizal Virani, who established his own studio in Vancouver after spending several years designing for top fashion houses around the world. He sketched for CN, a total-look unisex uniform kit consisting of 17 items.

While the designs were youthful and summery, Feizal took into account all possible Vancouver weather between May and October. Following Feizal's design lead, uniform coordinator Norma Jenkins selected and ordered short and long-sleeved T-shirts, pants, shorts, a bomber jacket and a slicker, and other accessories. The kit could be mixed according to the wearer's whim that day. Uniform components all sported various combinations of the three primary colors plus green, and white.

Staff at the CN Theatre at Canada Place, because of their different working environment, were outfitted in smart jacket, blouse and skirt outfits which were also designed by Virani.



J.M. LeClair
(Chairman & CEO)

Andrée Laliberté
(Dep. Commissioner)

Betti Port
(Dep. Commissioner)

J.R. O'Rourke
(Commissioner)

Betti Port

A. Laliberté

J.M. LeClair

L.C. Perry
Asst. to VP
Corp. Comm.
(also coordi-
nator CN
participation
in EXPO 86)





Al Menard

Mrs. R.A. Walker

Mr. R.A. Walker
Sr. VP
Western Canada

Betti Port

J.R. O'Rourke

A. Laliberté



CN THEATRE STAFF



From left to right

Suzanne Latta
Sandy Nesselbeck
Betti Port (Deputy Commissioner-CN Pavilion)

Lisa Rae Devries
Michelle Fleming
Renee Klaver (Supervisor)
Celine Lebon
Marc Ducommen

Late Arrivals

Tanja Grosse
Jennifer Trushell

CN PAVILION

TEAM 'A'



Seated - from left to right

Randy Jordan, Charles Lawson, Chantal Tournemolle,
Steve Davis (Davis Engineering), Charles Gagnon

Standing

Marie-France Bourgeois, Ruth Eisler, Joel Cawkell,
Naomi Chard (Supervisor), J.R., Oscar, Tonia DeSousa,
Tim Beaton, Carlyle Jansen, Lise Boisclair, Megan
Lougheed

Late Arrival

Kel Porter

Absent

Solange Avakumovic

CN PAVILION

TEAM 'B'



From Left to Right

Laurie Gallant (Supervisor)

Mary Fabian

Jennifer Duncan

Diane Bourrassa-Rogers

John Ramsay

Matt Fisher

Stephen Drake

Jeannie Patchell

Lori Creighton

Martin Plourde

Oscar

Heather Morgan

Lana Panko

Judith Nash-Lebon

Cathy Sham

Andrée Laliberté

Late Arrivals

Charlotte Best

Linda Parrott

CN PAVILION

TEAM 'C'



From left to right

John Landry
Candice Howard
Carmen Scicluna
Diane Lego
Jo Guenette
Alison Forbes
Nathalie Therriault
Cathy Vernon
Donna Paul
Cherie Miltmore
Bethany Sutton
Betti Port
Brent Belsher
Karen Stanley (Supervisor)
Jason Hardy
Oscar
J.R.

Late Arrivals

Mireille Cadieux
France Savoie

STATISTICS

CN THEATRE

The show 'cycled' every half-hour and as a result, Transitions was shown about 4000 times. With about 500 persons in the theatre for each show, total attendance was in the order of 2 million.

CN Pavilion

The 'locoMotion' production was shown about 28 times per day, for a total of about 4600 shows over the season. Average audience was about 225, and total attendance was over one million.

The interactive video units were in constant use.

The motion demonstration units all have 'counters' included in their works and their total usage during the exhibition was approximately:

Constant	185,000
Circular	14,000
Accelerating	167,000
Oscillatory-east	115,000
-west	93,000

We could not begin to count the number of guests who entered the plaza but were entertained by others, on the motion models and interactive videos.

17 people asked how to get to the Kodak pavilion.

SOME (BUT NOT ALL!) OF THE BETTER KNOWN PEOPLE SEEN AT
CN THEATRE

Royalty	Prince Albert and Princess Paola of Belgium Crown Prince Philippe of Spain Duchess of Argyle King and Queen of Tonga
Political	Prime Minister Mulroney & Family Dep. Prime Minister Mazankowski Mr. & Mrs. John Turner P.E. Trudeau and sons Former Premier Bill Bennett Lt. Governor and Mrs. Rogers Pat Carney - Minister of International Trade Israeli High Defense Commission Delegation President of Ivory Coast and Delegation Pres. of Czechoslovakia and Delegation
Astronauts	Marc Garneau - Canadian Sally Ride - first woman Prince Sultan of Saudi Arabia
Entertainers	Mr. & Mrs. Henry Mancini Charles Dutoit - Montreal Symphony Mel Brooks Anne Bancroft Shirley Maclaine John Travolta Michael J. Fox Neil Diamond Judith Forst Maureen Forrester Ed Asner

Business Pierre Burton
Lee Iacocca
Pres. Walt Disney Productions
Most CN Senior Officers

CN PAVILION

CN Officers & J.M. LeClair
Directors and R.E. Lawless
Wives R.A. Walker
Dan Oberlander
Frank Campbell
Emerson Mascoll
Janis Johnson
Alf Bentley
Eugene Demkiw
Marie Marchand

Air Canada Claude Taylor
Pierre Jeannot

Pavilion Hal Cameron - Air Canada
Commissioners Jack Irvine - GM
Tom Rust - B.C.
Dave Pollock - Royal Bank
Bruce Howe - Canada
Claude Benjamin - Quebec
Hans Steinaker - Switzerland
Bob Dowling - Alberta
Don Smith - BCTV

Business Jack Horner - G.T.A., Winnipeg
Mary Jean Mitchell - Green - Luscar
Russ Allison - CP
Various Chinese, Japanese & other
delegations

RANDOM SHOTS



J.M. LeClair
& Staff

Betti Port
& Staff
including
Geoff Stone
and a
younger
Naomi.



RANDOM SHOTS



Candice &
Mike Duffy

Pavilion
Guest
Lounge



RANDOM SHOTS



Monorail



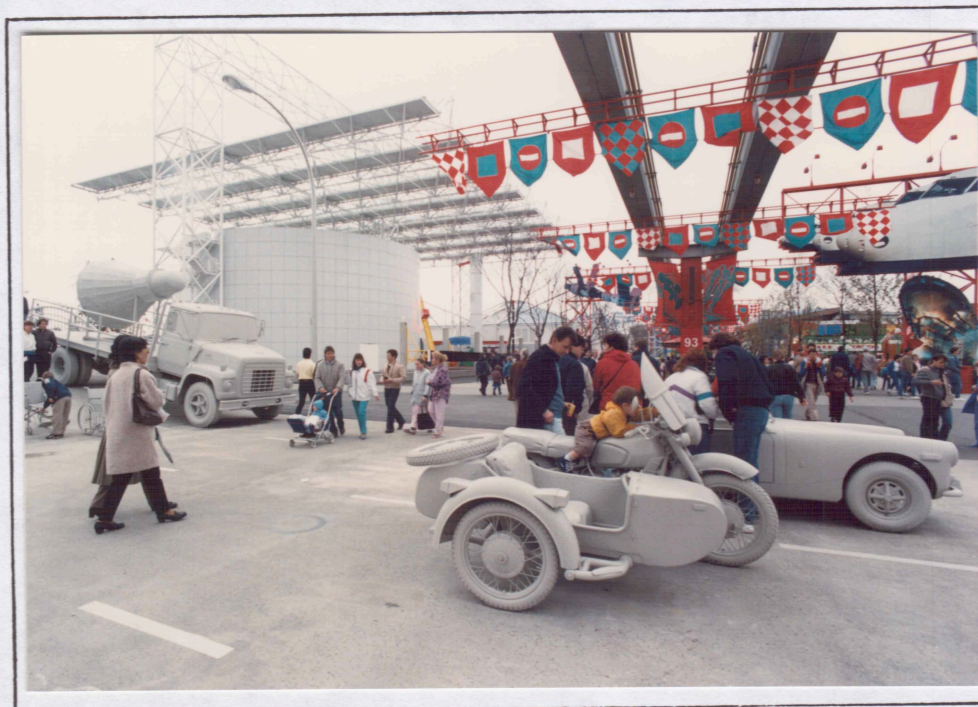
Tricky
Carlyle

RANDOM SHOTS



Nathalie

Hwy. 86



RANDOM SHOTS



May 1, 1986



RANDOM SHOTS



The
Design
Group

The noise
machine.

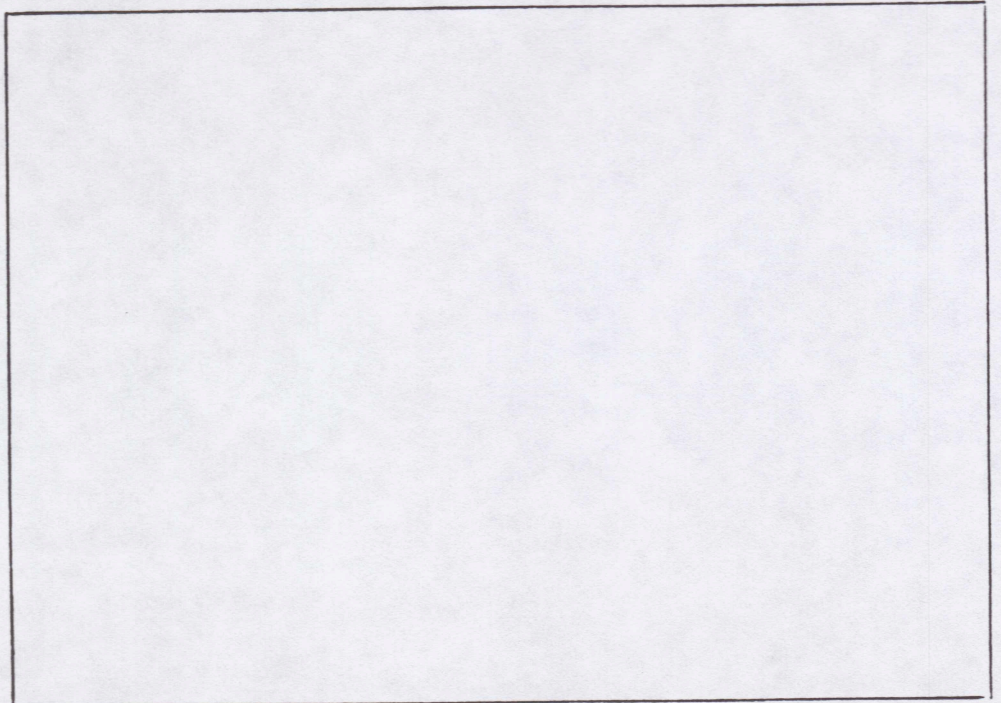
Music in
Motion



RANDOM SHOTS



J.R. & his
favorite
volunteer





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Communications générales
Canadien National
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L.C. Perry
Assistant Vice-President

L.C. Perry
Vice-président adjoint

Reference

N/réf.

September 02, 1986

To all staff at - CN Pavilion
CN Theatre
CN Police

I endorse what Dick O'Rourke wrote in his memo of August 18, but I have something to add.

Back in April I met with you during the training period and spoke about what we were hoping the CN presence at Expo would do for the company's image and profile in B.C. and elsewhere. I remember stressing the extent to which success in accomplishing our objectives rested upon you.

Well, so far it's working at least as well as we'd planned.

- CN is a "MUST" at the fair.
- Media notice has been outstanding.
- The feed back to headquarters' officers from our V.I.P. visitors couldn't be better.
- Permanent legacies to B.C. (the CN Theatre and the Motion exhibits) will be good for CN's Vancouver profile for a long time to come.
- The manner in which you have represented the style and spirit of CN has been super.

But we still have over six weeks of full operation before Expo 86 is history. We're expecting a higher proportion of V.I.P. visitors during that period so we still have many opportunities to make CN look good.

I know we can count on you right up until the closing moments to maintain the atmosphere of cheerful and friendly competence for which you have become famous.

I think we'll all look back on the summer of '86 as a grand adventure, with great spiritual and social rewards. (And the pay isn't so bad either!)

Keep smiling.

Lorne Perry

cc: J. M. LeClair
D. E. Todd
R. A. Walker
J. R. O'Rourke
A. A. Menard

CREDITS

CN Theatre

Production - National Film Board, Montreal.
Co-Directors - Colin Low and Tony Ianzelo
Cameras & Projectors - IMAX Systems Corporation, Toronto.

CN Pavilion

Project Design & Coordination - Gallop & Morin Lessard McInnes, Vancouver & Montreal.
Architect - Peter Cardew Architects-Vancouver.
General Contractor - Turnbull & Gale Co. Ltd., Richmond, B.C.
Motion Models - engineering & fabrication - W.R. Davis Engineering Co., Ottawa & Sardis, B.C.

Interactive Videos

- Executive Producer - Ross McConnell, CN, Montreal.
Director - David McLeod, Montreal
Film Animation - Michael Mills, Montreal

locoMotion

- Production - John McGreevey Productions, Toronto
Director - John McGreevey
Projection - Frischkorn Assoc. Inc.

Timeline

- Coordinator - John Gallop, Vancouver
CN Archivist - Dr. Kenneth S. Mackenzie, Montreal
CN Historian - Norman Lowe, Montreal
Consultant - Dr. Kathryn Bindon, Concordia University, Montreal.

Photographs

Debbie Laramée - Montreal
Bob Clarke - Vancouver