TELEBUS PROJECT IN REGINA

Wallace G. Atkinson
General Manager, Regina Transit System

Regina is the capital of Saskatchewan and has a population of about 140,000. It is located approximately 600 miles due north of Denver and was built on the prairie; every tree in this city was planted, for there are no natural trees. The downtown is relatively new, and most of the large buildings have been built in the past 10 years.

The Regina system and the one in Bay Ridges are quite similar in that they are manually dispatched, and they provide neighborhood service to few destinations (55 percent of the riders go to the central business district). The difference is that the Regina system is fully integrated with an existing transit operation. The telebus system carries about 5 percent of the total transit patronage in the city. In addition to CBD trips many other services are provided; 35 percent of our passengers go to local destinations, and about 10 percent go to schools within the area. So, it is roughly 10 percent many-to-many, about 35 percent many-to-few, and about 55 percent many-to-one. Telebus serves about 6 major destinations in the area—the government complex, 2 hospitals, and 3 shopping centers. The Regina ridership curves are not quite so steep as those for Bay Ridges; there is heavier off-peak usage of the Regina system.

On September 7, 1971, the telebus pilot project was put into operation (Fig. 1). After 4 months of operation, serving an area of about 3 square miles and a population of 18,000, the public's reaction to the tele-bus system had already guaranteed its future success. On Thursday, January 27, 1972, the pilot project was slightly more than 4 months in existence, and no fewer than 2,200 people traveled by telebus in a single day. By March, some 100,000 passengers had been carried on the new service.

Telebus begins with a phone call from your home. The dispatch office radios the driver in your area, and the driver includes your address in his route. You are picked up and delivered to your door when you want to travel.

All kinds of people use telebus: teachers, nurses, housewives, businessmen, and grade-school and high-school students—every segment of society. For the first time, the aged, the handicapped, and the young are able to travel on their own without assistance from friends or relatives.

Regina's version of telebus is designed as a feeder system. Passengers are transported to a transfer depot where they board a full-sized bus to travel to their final destinations. They return to the transfer depot by the connecting service and continue to their homes by telebus. The answering service receives calls anytime during the day or night. Regular customers may book service in advance and thus eliminate the necessity of making daily phone calls. The telebus then simply arrives at its specific time each day, and the service becomes as routine as getting out of bed. You find yourself getting to know the driver and the other regular customers on your route, and soon you are traveling with a

Figure 1. Regina telebus.

group of friends rather than total strangers.

To transit management, telebus is an exciting answer to the growing needs of an expanding city. Because telebus replaces more costly fixed-route buses and provides better service, it is receiving enthusiastic support from city councils. But the greatest response of all is from the passengers—the people who have found their kind of transit service. They love it, and they will tell you so.

Our total transit system carries about 8 million passengers per year. Usage in the city on the regular system is about 60 rides per capita annually. This usage is considerably higher than that in a comparable city in eastern Canada or in the United States because of the past history of transit service. The Regina system has been city-owned and -operated since it started in 1911, and, with the exception of a few years in the 1920's and a few years in the 1940's, it has always been subsidized. As a matter of policy to keep the fares as low as possible, it is subsidized at the rate of one-third the cost of providing the service, which roughly covers the capital and administrative overhead. Our fares are similar to the Ontario fares but are lower than those in most large cities in Canada and in the United States. Because of subsidization policies in western Canadian cities, transit fares have been kept low and usage has remained high. On the telebus, an adult pays a 35-cent fare and gets a free transfer to the regular system. Coming back on the regular system, he pays 25 cents and another 10 cents when he gets on the telebus with the transfer. So, one can go anywhere in the city for 35 cents. Statistics on operations, fares, and costs per revenue-mile for both the telebus and the fixed-route systems are given in Tables 1, 2, and 3. Additional statistics on initial and increased telebus operations are given in Table 4.

In summary, I would like to say that the public votes with their feet! In Regina, we have 400,000 votes for telebus. In Bay Ridges, and in Ann Arbor, there are similar responses. Cities that have put

Table 1. Fares and ridership for 1971-72 winter.

Item	Fixed Route	Telebus
Fares, cents		
Adults	25	35
Students	15	25
Children		
Cash	10	15
Tickets[a]	6.7	11.7
Senior citizens	16	26
Public passes[b]	18	25
Avg	19.5	29.0
Percentage of riders		
Adults	47.3	58.4
Students	13.0	8.3
Children		
Cash	6.0[c]	11.1
Tickets	6.0	3.5
Senior citizens	11.8	8.3
Public passes	15.9	10.4
Total	100.0	100.0

[a]Plus 5 cents.
[b]Surcharged 10 cents on July 1, 1972, but not included here.
[c]Estimated.

Table 2. System operations for 1971-72 winter.

Item	Fixed Route	Telebus
Operating vehicles	66	6
Operating hours	164,000	16,200
Operating mileage	1,710,000	183,000
Annual passenger trips	7,575,000	305,000
Population served	122,000	15,200
Trips per capita	62	20
Area served, square miles		2.75
Demands/bus hour	46	18.8
Demands/square miles/hour		21
Schedule speed	10.4	10.7
Passengers/mile	4.42	1.76
Operating speed	—	12.6
Average vehicle tour, miles	—	4.0
Capacity utilization, percent	80	50
Transfers, percent	22	54

Table 3. Costs per revenue mile.

Item	Fixed System	Telebus
Operators' wages	0.55	0.52
Fuel and maintenance	0.18	0.18
Capital	0.17	0.12
Overhead	0.21	0.37
Total	1.11	1.19

Table 4. Initial and revised telebus operations.

Item	Winter 1971-72	Winter 1972-73
Area served, square miles	2.75	
Peak		2.75
Off peak		5
Population served	15,200	
Peak		18,000
Off peak		32,000
Future addition		30,000
Service interval, minutes		
Weekday peak	15	nc
Weekday off peak	20	nc
Week night	40	nc
Saturday	20	nc
Hours, a. m. to p. m.		
Weekdays	6:30-11:35	6:00-11:35
Saturday	6:45-9:35	nc
Number of vehicles		
a. m. peak	6	12
Off peak	3	8
p. m.	6	10
Noon	5	8
Night	1	2
Saturday peak	5	7
Passengers per day		
Avg	1,200	2,000
Maximum	1,955	3,500
Demands per bus hour	20	22
Avg fare, cents	29	32
Vehicle tours, minutes		
Peak	30	nc
Off peak	20	nc
Nights and Saturday	40	nc
Scheduled speed, mph	10.7	nc

Note: nc = no change.

in an integrated system have had similar successes and are still on a growth curve. I estimate that Regina has only tapped 50 percent of the market in the initial system. We are expecting to go to about 3,000 passengers per day during the 1972-73 winter in the existing area.

We had had a tremendous amount of publicity across Canada, and it is filtering into the United States. The public is absolutely demanding this kind of service. They are asking for it in London, in Ontario, in Winnipeg, in Vancouver, in Pasadena, in Hollywood, and anywhere the public has seen any publicity. Sit down with any person that has never heard of this system before, and in 10 minutes you have a wildly enthusiastic passenger. It is an automatic reaction: "If we had that kind of bus service in our community, I would ride." And they do. We proved that they do; many people who ride the telebus were never on a bus in their lives before. We are getting people who could not start their cars on a cold morning and took the bus and then continued to take it. We are getting the young children who had to be driven everywhere by their parents but who can now safely ride the telebus. There are children on the system who are going to day nurseries. How many 3- and 4-year olds can ride a regular transit system safely? We have handicapped people who cannot walk to a bus stop. We have people with cystic fibrosis, muscular dystrophy, asthma, and other handicaps so that they cannot walk to a bus stop, cannot stand in the rain, or cannot walk on a dusty day. We have a door-stop service for these people. We are also catering to all sorts of other special needs. If the system has any trouble, we can call the passengers at home and tell them what happened.

Our biggest problem at the moment is that we cannot get the equipment manufacturers to build the type of equipment we need. This applies to both the buses and the communications systems. This is where the big hold-up is going to be in expanding these systems. The software has been developed, but the hardware is limited. I hope that we can put as much

pressure on as many city councils, politicians, and equipment manufacturers as we can so that they will get busy and develop and implement the system that the public is demanding. I think the public has already voted for this system. The revolution is coming! And if transit managers do not get involved, it will roll right over them like a steam roller. That is why we got involved, and that is why other transit people are getting involved.

INFORMAL DISCUSSION

Question: In the peak hour, does one have to walk to a station? What is the walking distance?

Answer: People have the option of walking to the main-line station or being picked up by tele-bus at their doors. There are about 1,500 apartments within 3 blocks of the main line to which telebus passengers transfer. We have people who ride as few as 2 blocks on a rainy day and are quite willing to pay 35 cents to do so.

Question: What are your thoughts on carrying school children on the telebus system?

Answer: Carrying school children puts a peak load on top of the normal work-trip peak load, although shifted somewhat. The work peak occurs at 8:00 in the winter and at 7:30 in the summer, when we go on earlier work hours. School trips peak between 8:30 and 8:45 (school starts at 9:00), and we can accommodate that peak with buses that have finished carrying work trips. But serving the school peak load is expensive. It requires more equipment, and, of course, the children's fares are only 15 cents. But we think we have to provide a total service to the community.

Question: What difference is there between your peak and off-peak service intervals and your peak and off-peak vehicle tours?

Answer: In the peak period, the vehicle tour is 30 minutes. We lap 2 vehicle tours 15 minutes apart, and so there is 15-minute service. In the off-peak, we run a 20-minute vehicle tour, and there is just 1 bus in each area; we provide 15-minute service in the peak period and 20-minute service in the off-peak period. The main-line buses run every 15 minutes in the peak period and every 20 in the off-peak.

Question: Apparently, you have a variety of equipment. Can you say anything about what good luck or what bad luck you have had with this system?

Answer: We operated the system all winter and carried heavy peak loads with a standard 42-passenger transit bus equipped with radio. And about all we did was paint a green stripe on it. Now to do this was pure hell, because it went down to 40 below zero on January 27, and we could hardly steer the bus. The normal transit bus is not equipped with power steering. It became almost impossible to get up and down the crescent streets. But we operated all winter long and carried the peak loading. It was not until March 1972 that we received our small vehicles. The success of the system in severe weather was with the big equipment. We think we will have greater success now that we have the small buses. We have two 14-passenger Dodge Maxi-Vans. They are about a foot and a half longer than the buses used in Ann Arbor and in Bay Ridges. We have in addition a 23-passenger Flxette in service and more 14- and 18-passenger vehicles on order. We are also using a unibus that seats 23, similar to the one used in Bay Ridges. It has a good body shell, but it has been

mounted on a truck chassis, and so it rides like a truck. We have had to completely rebuild the suspension system because the people in the back seat were being thrown a foot in the air! If the driver hits a bump, up they go! The kids love it; it is usually full of kids in the back seat. We have had endless problems—broken springs and shock absorbers that keep tearing loose from the frame. I will not mention the supplier, because these problems apply to every piece of truck equipment in transit service today. They are all lousy! We do not have a decent, air-ride, small bus for this kind of service. We expect to buy 7 buses by this winter. Frankly, we do not know what to buy. I think I can safely say, at this moment, there is not a sufficiently reliable small transit bus in the 20-passenger range available. I may get some frowns from the manufacturers, but we have looked at 7 different companies and have not found an acceptable small transit bus. We think there is a real technology gap between the type of equipment that we need and the type of equipment that is available. If anybody can come up with a transit bus in the 20- to 24-passenger range, we will be very happy. We think there is a big market for it.

Question: What is the ratio of buses required to population served?

Answer: Our original feasibility study estimated 1 bus for 700 dwelling units, but we think that can go up with demand. Present demand is 21 passengers per square mile per hour. We think that 1 bus can handle a square mile at a demand level of about 35 per hour. We think that we can run 20-minute vehicle tours and carry about 12 persons per tour, which would be about 36 per hour. At those loading capacities, we would break even on operating costs.

Question: How many months in the winter do you have weather so bad that an automobile would have trouble steering or traveling through snow?

Answer: The write-up we got in Time magazine indicated that it was 20 below in Regina all year round! Actually we have very severe weather from about January 10 to the end of February when temperatures are 35 to 40 below at night and up to maybe 0 in the daytime. This presents problems in driving cars. However, I would not want you to believe that a demand on this system is created because the weather is cold; any bad weather—rain, wind, dust, heat, and so on—affects ridership. If we had a rain shower this afternoon in Regina, the passenger level would go up by 100. When the women get their hair done, they do not want to walk in the wind, and so they get on this system.

Question: Is that another way of saying that if the weather were nice all the time, like it is in Miami, you would not have so many passengers?

Answer: Not at all. People do not like to walk in hot weather either but prefer to ride in air-conditioned buses. The weather is anything but nice for walking around in Miami. And, of course, it rains down there, too!

Question: How do the drivers feel about this system? Are they bidding for this work?

Answer: The drivers do bid for this work. There is a certain amount of status in being involved in the new system. We did not preselect drivers. We let them bid in the order of seniority, but we reserved the right to remove a driver if he were unable to handle the run. Some of them have asked to get off after they tried it because they did not like the barrage of information com-

ing over the radio. Our drivers come from the middle third of the seniority list. The oldest drivers will not touch it (they do not want to learn anything new, for they are waiting for retirement), and the youngest drivers do not get a chance to get at it.

Question: What is your street pattern like?

Answer: The street pattern in Regina is almost identical to the one in Bay Ridges—crescents, cul-de-sacs, and bays. In some cases we cannot get into those bays in winter, and so we phone the people and ask them to come out to the end. But we have operated under zero visibility, under 40-below conditions, and under heavy blizzards. We got a bus stuck in a snowbank one night and had to take everybody's telephone number and radio them to the dispatcher who telephoned their homes to say, "Your daughter (or your wife or your husband) is stranded on such-and-such a street, and we'll get her home when we can." This is a very personalized service, and you can do this sort of thing.

Question: Is the driver self-routed?

Answer: Yes, the driver is completely self-routed and, in some cases, after 2 weeks, he does not even need a map. He keeps it all in his head.

Question: Your services are directed to shopping centers. Is there any special telephone for people to use?

Answer: No, we do not have any, but we have considered installing special telephones. In the heavy-use areas, there are 4 nursing homes: One has 350 employees, another has 200, and a couple are small. We have considered putting direct lines in those. Our system was pretty crude last winter. We just used normal telephones and had no fancy equipment. In October 1973, we are going to triple the system. We are going to have a new communication system—fancy radio-telephone dispatching, direct phone to the bus driver in the off-hours, and a full super-deluxe system with provision for teleprinters and all kinds of computer equipment. We expect to have 60,000 residents on the system by October.

Question: Would you elaborate a little on who is riding the system?

Answer: Everybody is riding. We have children as young as 3 years, senior citizens, and business people. The heaviest riding is coming from the high-income families (average home $40,000 and average income $25,000). Over half of our passengers come from families that own 2 or 3 automobiles. The other half comes from 1-car families. I guess the average car ownership in the area is about 1.6 to 1.7 per household. We have taken pictures at 10:00 a.m. on a weekday at a 3-car home where the garage doors were opened and 2 cars were in the garage and 1 was on the street. The cars stay home unless there is some special need to go across town. I might add that parking in Regina is fairly cheap (about $15 per month), and it is free at the government buildings.

Question: When you take away the fixed-route buses, which are reasonably cheap, and put on the market expensive telebus, what about the low-income people and their attitudes toward this?

Answer: Maybe I should have started out by saying that in Saskatchewan we live in a "welfare state". Furthermore, it is a myth, you know, that transit is for the poor. Certainly, there are poor in our community, and there are people who need assistance. The people on welfare, the people who really cannot afford the fare, and the handicapped people are given a

pass that is paid for by the state. They pay nothing on the system, but we get the full value for the pass from the state. The in-between areas where there is high demand from low-income groups will have both fixed-route service and telebus because the demand is high enough to provide both. People in those areas will have a choice of fixed-route service or deluxe service. Anyone in those areas unable to walk to a bus stop will get a telebus pass paid for by welfare funds. We think this is the way to go.

Question: What is the bus-driver wage rate?

Answer: Driver wage rate is among the highest in the country—about $4.00 per hour.