

1 Q. The system identified below was purchased in 1989 and manufacturer
2 support terminated in 1991. Answer the following questions or provide the
3 information as appropriate.

4

<i>Budget Item</i>	<i>Amount</i>	<i>Description</i>
B-66	\$8,373,000	Replace VHF Mobile Radio System

7

8 (a) Further to NP-117(a), provide a copy of the cost benefit analysis of
9 alternatives considered in the replacement of the current system.

10

11 (b) Provide a breakdown of budget item by: (i) mobile, portable, base
12 station radio; (ii) switch and site controller; (iii) repeater; (iv) other
13 equipment (providing a description of the other equipment).

14

15 (c) Provide the incremental cost attributable to new coverage and a
16 breakdown of that cost.

17

18 (d) Provide a cost benefit analysis indicating the financial benefit of
19 deferring the cost of radios and existing repeater equipment for three
20 years.

21

22 (e) Indicate what additional functionality is being provided in the new
23 system. For example, will the new system have digital radio
24 capability?

25

26 (f) Further to response NP-98(a), indicate the maintenance tickets issued
27 for each year (1996 to 2000) attributable to switch/ controller,
28 repeater, or VHF radios.

1 A. (a) A formal cost benefit analysis was not performed for this system as it
 2 is a direct replacement for a currently operating system. The existing
 3 system is critical to operational needs and therefore must be replaced
 4 with a system of similar capabilities.

5
 6 (b) Of the alternative radio systems priced, the chosen system Logical
 7 Trunk Radio (LTR) was the least expensive, with direct material costs
 8 estimated at \$5.7 million. Three other technologies, TETRA, Motorola
 9 SmartZone, and ComNet EDACS, were priced with costs ranging from
 10 \$7.9 million to \$11.7 million.

11
 12 (c) The incremental cost of providing new coverage is based on the
 13 assumption that six new repeaters will be required, and of that six,
 14 three repeaters will include new towers, and three will use existing
 15 towers. It also assumes that the paging system coverage increase is
 16 performed using repeater equipment removed from existing sites. The
 17 total direct incremental cost is estimated to be \$775,000, broken down
 18 as follows:

Item	Estimated Cost
Towers	\$450,000
Repeaters.....	\$315,000
Paging Equipment.....	\$10,000

19
 20
 21
 22
 23
 24
 25 (d) Relying on the existing switch, which has not been supported by the
 26 manufacturer since 1991, for another three years would jeopardize the
 27 stability of the entire mobile radio system. This is the last system of
 28 this type in service anywhere, and failure will result in total loss of VHF

1 mobile communications. From a safety and operational perspective,
2 the risk of delaying the project greatly outweighs the financial benefit
3 of deferring the project for three years. With this in mind, the net
4 difference in cost of delaying the replacement of the system for three
5 years is estimated to be approximately \$1.4 million, assuming no
6 salvage value for the existing equipment.

7
8 (e) The proposal as submitted is to replace the existing system with a
9 standard based trunked radio system. The proposed system, by
10 being based on an open standard, prevents the Corporation from
11 becoming reliant on a single source of equipment and thereby protects
12 the investment for its useful life. A trunked radio system offers
13 functional advantages and will in many cases eliminate the need for
14 cellular telephones for operational on-call staff, thereby reducing
15 operating expenses. The proposed system offers such features as:
16 privacy, individual and group calling, roaming, Automatic Vehicle
17 Location (AVL) capability, and low speed data capability. A trunked
18 system ensures that future expansion requirements are easily met
19 without large re-investment in design and procurement.

20
21 (f) Mobile radio outage maintenance ticket summaries are provided
22 below. Please note that mobile and portable radio repairs are not
23 normally ticketed, so exact numbers of problems are not available for
24 these pieces of equipment. It is estimated that as many as 500
25 repairs on portable and mobile radios were actually conducted in the
26 five year period 1996-2000. Also, the trouble ticketing system cannot
27 distinguish between repeater radio and controller outages, so these
28 are listed together.

	Ticket Type		
	<u>Year</u>	<u>Switch</u>	<u>Repeater/Controller</u>
1			
2			
3	1996	11	34
4	1997	4	30
5	1998	6	29
6	1999	3	22
7	2000	1	18
8	2001 (to date)	4	13
9	TOTAL	29	146