

## AIR CONDITIONING

The CRM should provide remuneration of costs associated with extra fuel consumption, repairs and maintenance and costs associated with R & M where specialist facilities are not readily available.

**ISSUE 1:** Assuming that depreciation of the air conditioning unit is calculated with the bus acquisition price, remuneration for B type buses should be increased to 8.46 cents/km and C type to 9.07 cents/km

### Extra Fuel Consumption.

Running costs are affected by the following:

- Time of day
- Passenger load/heat load
- Solar heat load
- Humidity
- Operating environment i.e. hilly or flat conditions
- Driver habit i.e. fast take off
- Full fan mode (manual) or automatic fan mode
- Window tint
- Number of stops per kilometer
- Bus body structure
- Compressor specification.

In discussions with contractors and with Herman Strohmogel of Thermoking (an expert in air conditioning), fuel consumption increases up to 10%. Therefore, running costs are:

B type 3.09 cents/km

C type 3.57 cents/km

### R &M

A maintenance programme provide by Coachair over the life of the bus shows the following yearly costs associated with the programme:

yr 1	yr 2	yr 3	yr 4	yr 5	yr 6	yr 7	yr 8	yr 9	yr 10	yr 11
400	400	700	500	400	700	500	400	700	500	500
yr 12	yr 13	yr 14	yr 15							
700	500	500	700							

These costs could vary depending on who does them and the locality. The prices quoted above are metropolitan prices. Over the life of the bus, if serviced correctly you should be up for one compressor replacement and an overhaul. A new compressor cost is \$10,000 for the larger ones. Pending on what is wrong with a compressor that can be overhauled the cost can vary, however, it should work around \$7000 for the larger ones.

Therefore, total cost for R & M for B and C is \$25,100. This equates 4.18 cents/km.

## R & M Associated Costs

The last issue to be considered in the costing of this element is the time to travel to a servicing center, waiting time and traveling home time. In a lot of rural areas, air conditioning mechanics are just not available and therefore required servicing require some sort of travel. Assuming 5 hrs per normal service (includes traveling time) and 8 hrs for major service, over the lifetime of the bus, a total of 91 hrs  $\{(5 \times 15) + (2 \times 8)\}$  for B and C type. This equates to \$2229.50 (using \$24.50/hr).

In many regional areas, the average ambient temperature is very high and therefore, temperatures inside the parked bus in the high forties are not uncommon. Therefore, the buses must be run for at least a half an hour a day in summer and quarter of an hour in the more temperate months to lower the temperature to a reasonable level before picking up children. This will add an extra cost over the lifetime of the bus of \$4933.96 for B and \$5693.03 for C

R & M associated costs for B are \$7163.46  $(\$4933.96 + \$2229.50) = 1.19\text{c/klm}$ .

R & M associated costs for C are \$7922.53  $(\$5693.03 + \$2229.50) = 1.32\text{c/klm}$

Total cost for B =  $3.09 + 4.18 + 1.19 = \underline{8.46 \text{ cents/klm}}$

Total cost for C =  $3.57 + 4.18 + 1.32 = \underline{9.07 \text{ cents/klm}}$