

## **Report on Air Conditioning Unit Maintenance in Baldwin Square 1**

Michael Oelke 6 Feb 2005

The exterior air-conditioning units for the Baldwin Square I town homes are basic units installed in 1998. There are two obvious problems with these units. First, the fan guard / grille on top started rusting after about three years and has become an eyesore. Second, the compressors on the basic units are quite loud. This is compounded in summer when everyone's unit is running and the noise build up in the concrete alley between the houses. This report summarizes the repair on both of these.

### **Summary:**

#### Grille:

The fan guard replacement is very easy and a necessity. The new grille can be purchased for \$56 and installs in a few minutes. Strongly suggest getting four replacement 8-32 acorn nuts for the mounting to the motor and four replacement #8 (size?) sheet metal screws for holding the grille down to the housing. Some of these nuts are very rusty and sanding/ repainted them is way too much work. Just buy and install new screws. Since these units are only designed to last ~11 years, this replacement grille should last until the unit needs to be retired and replaced with a newer, more efficient model.

#### Noise:

Carrier sells an add-on acoustic blanket that wraps around the compressor. The Blanket P/N is 2V78897 and it costs \$75. It is also very easy to install (details below), however, the actual drop in compressor noise is very little (only ~3dB at 30" from the source). Based on this, the acoustic blanket add-on is not recommended as the incremental benefit is too small. However, as a/c units wear out they should be replaced with higher-grade units that are 1) more environmentally friendly and 2) that are significantly quieter.

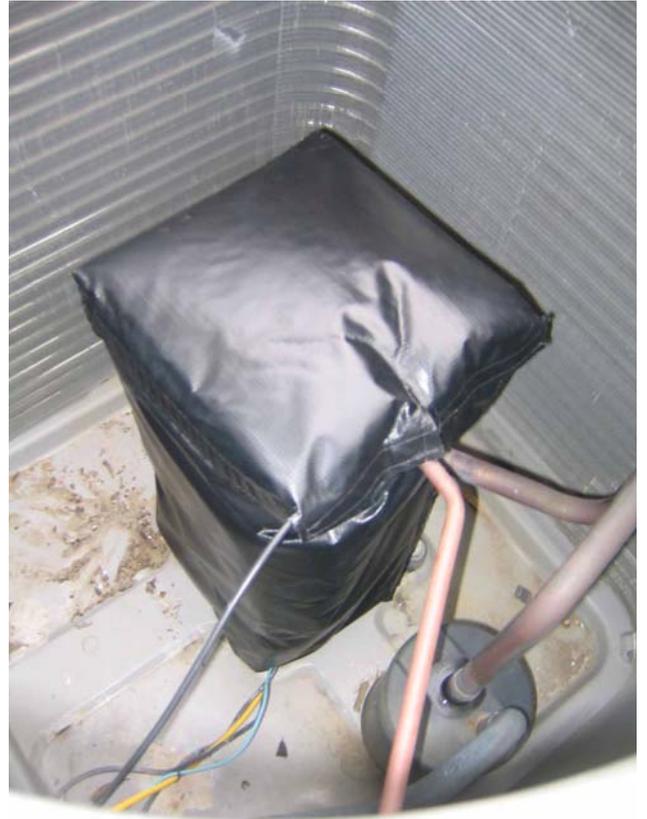
### **Details on acoustic blanket installation.**

The blanket is a simple blanket with Velcro closures. It folds in to a box with the bottom open and a few slots on one long edge through which the Freon lines can pass. It installs in minutes. Pictures of blanket before and after installation are below.

Questions on this report or the installation can be referred to [mike@oelke.com](mailto:mike@oelke.com)



Photo captions clockwise from upper left:  
1) Blanket flat layout before folding in to shape  
2) Assembled blanket  
3) Taking measurements with SPL meter  
4) Blanket installed over compressor

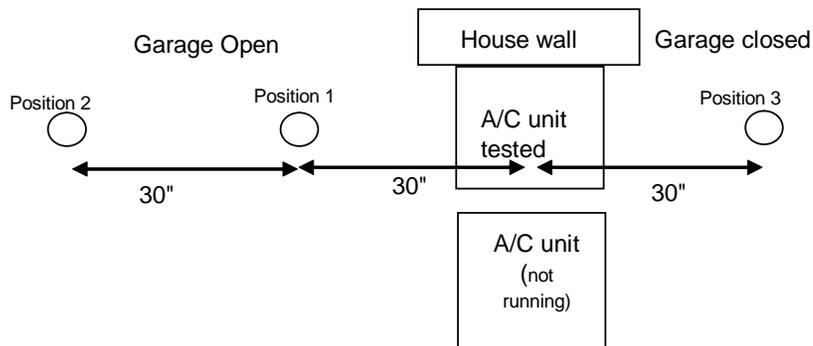


## Measurement of Air Conditioning compressor noise

6-Feb-05

Installed acoustic blanket on the basic Carrier a/c unit of Baldwins Square 1 townhome on Sunday Jan 30, 2005.  
Took before and after measurements of sound pressure level.

Measurements were taken with a SPL meter on a tripod, ~4ft above ground. Measurements taken from thr positions.



Layout of test setup

		Position 1	Position2	Position 3
Before blanket	A weighted	71	67	72
	C weighted	74	69	73
Blanket installed	A weighted	68	64	67
	C weighted	73	68	70
Difference	A weighted	3	3	5
	C weighted	1	1	3

So the drop in acoustic level is about 3 db

A-weighting is a frequency domain weighting based on human hearing response; filters out low freq sound to approximate the response of the human ear.

C-Weighting filters less low frequency sound than A-weighting; closer representation of acoustic energy across all frequencies.