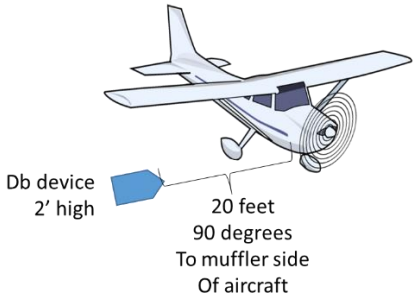
Hernando Aero Modelers #314

Sound Checks

"By a wide margin, the largest contributor to the loss of flying sites is the noise model aircraft/engines produce. At some time, it is likely that someone living within earshot of your flying field will complain about the sound coming from the aircraft. If you don't have noise under a certain amount of control, you will quickly become a target."

We have updated our status with the AMA (now a Silver Award Leader Club). We now need to be concerned with "Sound Checks" as part of our club. We measure sound output from our aircraft in (db) - it is the abbreviation for decibels - which is a measurement of sound wave impact. It is a measurement that increases exponentially and the following is an explanation of our sound check method.

AMA wants our aircraft to be no louder than 96 db when tested on soft surfaces such as grass, dirt, etc and 98 db if measured on hard surfaces such as tables, concrete, blacktop and such. This is measured at a distance of 20 feet from the muffler side of our aircraft.



Aircraft needs to be strapped or held by mechanical restraints – not held by hands or between legs. When the person taking the reading (with a decibel meter) is ready, full throttle must be applied to the motor and a db measurement will be taken. Db device can be on a tripod or handheld. Note: *it should be set on the "A" weighting selection.*

Most of our aircraft can pass this test easily regardless of gas or glow engine or even possibly electric (or rotor blades in the case of a helicopter). We refer to "aircraft" because ***we are not just checking the motor sound alone but how it***

sounds in the final aircraft. If the aircraft has been in a major rebuild or the engine is placed in a different aircraft it may need to tested again.

What if it is too noisy! Many easy fixes are available.

Soft mount your engine

Change muffler (pitts, can, canister type, etc),

Go to a 3 or 4 bladed prop,

Possibly increase prop size

ALSO:: As the distance from the sound source is increased, the sound decreases.

The next page shows some typical everyday db sound levels.

Decibel Levels of Everyday Sounds

Soft whisper	30 dB
Refrigerator	40 dB
Light traffic	50 dB
Normal conversation	50 dB
Daytime sound in a quiet suburban neighborhood	55 dB
Noisy restaurant	70 dB
Vacuum cleaner	75 dB
Dishwasher	75 dB
Washing machine	78 dB
Blow dryer	80 dB
Electric razor	85 dB
Lawn mower	90 dB
Roar of crowd at sporting event	90 dB
Garbage truck	100 dB
Power tools	100 dB
Leaf blower	102 dB
Stereo headset	110 dB
Subway train screech	115 dB
Rock concert	120 dB
Thunderclap	120 dB
.22 caliber rifle	130 dB
Low flying aircraft	140 dB
Jet take-off	140 dB
Toy cap gun, firecracker	140 dB
High-powered shotgun	170 dB
Rocket launch	180 dB