



# Texas City Wings



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## Myths Busted

By: Harvey Cappel

Nearly everyday we fly our models someone (utilizing far more time to talk than fly) has an alternate theory to explain pilot error. Words like interference, hits, harmonics, lock out etc. are often used without the benefit of universal definitions or understanding of the phrase or word. Usually the more technical sounding word or phrase (“harmonics” for example) the more believable the story. It goes like this “in the mind” (if he can say that word he must know what it means and if he knows what the word means he must know what he means.) So here I go with a lot of these mystery words. I do know what they mean so you must believe me.



Actually I am going to attack only one word “harmonics” and one phrase “lock out”. In doing so I hope to bust two myths and help those lost souls get back to thinking pilot error. Don’t take this too seriously; it’s just my way of pushing the envelope of the readers’ mind. I personally plead guilty to using unproven excuses from time to time.

### Harmonics Myth

This is the one where if three people are flying using 72 MHz channels 30, 40 and 50 the one on 50 will be shot down because of mysterious harmonic mixing of channels 30 and 40 to make another signal equal to channel 50. Read on.

### On 72 MHz Interference

Channel 30 fundamental frequency is 72.390 MHz

Channel 40 fundamental frequency is 72.590 MHz

The 1<sup>st</sup> harmonic of channel 40 is two times 72.590 MHz or 145.180 MHz

The difference sum of channel 30 fundamental and channel 40 1<sup>st</sup> harmonic is  $(145.180 - 72.390) = 72.790$

This is the fundamental frequency of channel 50.

So the theory is that if channel 30 and channel 40 are transmitting at the same time a channel 50 signal will be in the air.

*(Continued on page 3)*

### Texas City Radio Club Meeting Minutes November—

#### David Gatling – Secretary

These are the minutes for the Texas City Radio Control Club meeting for November 19<sup>th</sup>, 2009. The meeting at the Nessler Recreation Center was called to order at 7:30pm by President Michael Grassmuck. A quorum was met with 19 members in attendance.

Visitors: none

**Secretary’s Report - David Gatling:** A motion was made, seconded, and passed by the membership to accept the October meeting minutes as written in the October Newsletter.

**Treasurer’s Report – Ray Saenz:** Ray stated that the beginning balance in November was \$9,828.12 and ending balance was \$9,599.95.

**President’s Report – Michael Grassmuck:** Mike reminded the membership they need to notify him by November 22<sup>nd</sup> if they plan to attend the Christmas party.

Mike turned the meeting over to Harvey Cappel to update the club building status. Harvey stated that he, Mike Grassmuck and Randy Brown met with the

Texas City Parks Department and gained their approval for the club building. A building permit has been obtained from the city. We are presently waiting on the logistics for the money before construction can begin. The estimated cost for the building is \$45,315.00. The cost to the club will be \$5000-down and \$2000- per year. Harvey estimates the building could be completed by April 1<sup>st</sup>, 2010.

**Safety Officer’s Report – Butch McEachern:** Butch stated that there were no incidents for the month.

**Pilot Instruction – Harvey Cappel:** No one in training.

**New Business –** A reminder to the membership to roll the tumblers on the main gate and concession stand locks before locking so they cannot be unlocked without the combination.

Kevin Furman requested that his name be withdrawn as a nominee for the member at large position in 2010. Butch McEachern then nominated Kevin as secretary for 2010 and seconded by Glen Pope. There were no more nominations for secretary and the nominations were closed.

Since there was no one opposing any of the nominees for each director position for 2010, Harvey Cappel made a motion that the nominees for the 2010 director position be elected by acclamation. Butch McEachern seconded the motion and a majority of the membership approved. Therefore the Board of Directors of TCRCC for 2010 is as follows:

- President- Randy Brown
- Vice President-James Grassmuck
- Treasury-Ray Saenz
- Secretary-Kevin Furman
- Members at Large-Don Roccaforte, David Gatling

Meeting was adjourned at 8:10pm.

**Next scheduled members meeting – January 28, 2010.**

“Texas City Wings” is published by the Texas City RC Club. Opinions expressed are those of the authors and not necessarily the views of the editor or officers of TCRCC.

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## Myths Busted

*(Continued from page 1)*

This is true just the same as every frequency ever thought of is also in the air everyday all the time and theoretically there will be interference. I expect however the interference will be about the same as that of the sound distortion in a Texas boom box caused by a mouse pissing on cotton in downtown New York City. In theory it is a problem but a really infinitesimally small one.

The myth fails as a practical concern because:

1) A good transmitter is designed to filter out unwanted signals including harmonics so that all unwanted frequencies that do get transmitted are of low enough power to not normally cause a problem. Consider this: channel 30 is 72,390,000 Hz and channel 31 is 72,410,000 a difference of only 20,000 Hz and the two transmitters have no problem separating these close signals without interference. The problem of concern is the mixing of the channel 30 fundamental 72,390,000 Hz with the channel 40 1<sup>st</sup> harmonic 145,180,000 a difference of 72,790,000 Hz. If the transmitter can ignore a signal only twenty thousand cycles away I believe it can surely ignore one 72 million cycles away. It can easily ignore a

mouse pissing on cotton in New York even though the mouse is actually pissing.

2) For the theoretical interference to even take place there must be some electrical coupling of the two frequencies either inductive or capacitive or both. The open air coupling of the two frequencies will be very inefficient so no real practical, measurable (except by a very expensive and sensitive RF analyzer) signal will even exist. This is to say the mouse in New York trying as hard he/she can, can't even piss.

Further evidence of my conclusion is the absence of any warning of any such problem by any of the manufacturers' of the transmitters.

If this doesn't convince you then I just guess you will have to take a trip to New York City and observe the inept pissing mouse for yourself.

### Lock-Out Myth

This is the one where after observing the delay time between the 2.4 GHz transmitter "turn on" and some receivers "wake up" a story of a theoretical flying problem was born.

On some 2.4 GHz receivers this is in fact a true theoretical problem. However for it to be a flying problem one must duplicate (in the air) the start up sequence observed on the ground as follows:

1) While flying turn off your transmitter and then turn it back on. This may crash your airplane (proving the lock-out theory) but don't try to tell me it wasn't pilot error. I know of no flying maneuver that requires turning off your transmitter while flying.

2) By experimenting on the ground one can also observe this theoretical problem when the receiver battery voltage drops below 3.5 volts. As I recall long before 2.4 GHz, when one attempts to fly a model with a battery that can drop to 3.5 volts in the air one will experience a battery problem caused by pilot error. You are not ready for 2.4 GHz if you have not yet learned to fly with charged batteries. Yes I can hear it now. But my big and numerous servos can pull the battery voltage down to 3.5 volts. Duh, get a bigger battery.

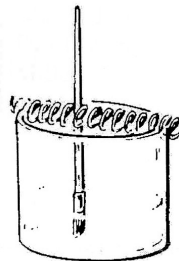
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## Tips and Tricks

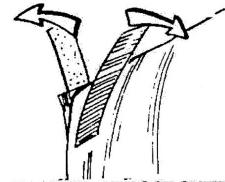
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### BRUSH PARKING

A spring stretched across a jar of thinner provides a convenient spot to park the dope brush clear of the bottom.



### SEPARATE THOSE SHEETS

The protective backing on some covering films can be difficult to separate, initially. A strip of masking tape applied to each side creates a "handle" on which to pull—sheets then easily peel apart.

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