

Newsletter of the Pikes Peak Radio Control Club

AMA Club Number 179

Volume 37, Number 06 June 09

Officers: Pres - Jim Terry; VP - Ben Woofter;

Secretary - Rob Waggoner; Treasurer - Frank Tuxworth

Mailing Address: P.O. Box 25604, Colorado Springs, CO 80936

Web Site: <http://www.pprcflyers.net>



Next Club Meeting:
Tuesday, June 2nd 2009
7:00 PM at the ELIC
(East Library Info Center)
Pikes Peak Public Library on Union

Last Month's Club Meeting Notes

(May)



Meeting Started: 7:05 pm
Meeting Adjourned: 8:45 pm
Members Attended: 35
Visitors: 4

Old Business:

1) Since the club swap meet has been canceled twice due to weather, Club President Jim Terry decided to postpone it until further notice. However, Jim did state that members who wanted to sell or trade items could still bring it to any of the club meetings or post it on the club website.

New Business:

- 1) Club Treasurer Frank Tuxworth stated that the club CD has been cashed in for a minimal gain.
- 2) Dick Clasen discussed how other hobby clubs in Colorado Springs would like to have our club members as guest speakers to talk about RC airplanes.
- 3) Larry Laughlin led the discussion about the east runway repair issue. It was discussed in detail and voted on to have it repaired.

Airplane Funnies . . .

Submitted by: Joe Smith



“Cessna N172 this is Springs Tower, say again your position? I can't understand you with all the screaming in the background!”

Waddell & Reed Guest Speakers

By Keith Davis



The club had the pleasure of having Mr. Jim Lindsay and Mr. Frank Dearden from Waddell & Reed Financial Planning Services speak to the crowd.

They talked about individual financial planning as well as group financial management and how they can possibly help you in today's economy.

In Addition, they brought up the idea of sponsoring and / or providing food services to our future club events, at little or no cost to the club.

This may be an issue that the club president and EC members may need to look further in to. Who knows, Waddell & Reed's offer may or may not be beneficial to the club.

All About Warbirds

By Keith Davis

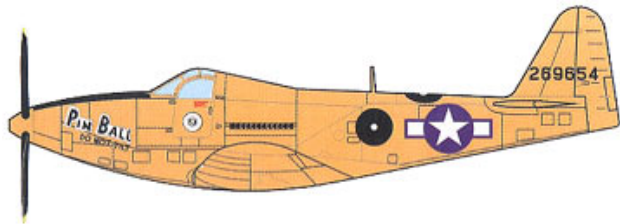


Flying the Bell RP-63 Pinball was definitely a job for "Volunteers Only" and here's why.

Until 1944, aerial gunnery was normally conducted by an aircraft towing a target glider, straight and level. But the pilots couldn't get the "feel" of shooting at a target trying to evade him.

Bell Aircraft Company decided to take some of its excess P-63 King Cobras (approx 350 of them) and convert them into a "Piloted Dogfight Target" aircraft.

The new planes was totally stripped of its armor and armament and covered with armor from a specially treated aluminum alloy. The armor was 5-10 times thicker than in the usual P-63. Maximum armor thickness was in the area of the cockpit, the engine and the fuel tanks.



In addition, bullet-proof glass was added, steel grills placed over the intakes, steel sleeves over the exhaust stacks, the dorsal intake removed and a propeller with thick, hollow blades was installed.

The aircraft was then covered with sensors on the outside and indicators on the inside. An illuminating light was installed in the propeller hub, where the 37mm cannon used to be.

When the aircraft was hit with training bullets, the hub would light up, indicating a hit. A red light would also come on inside the cockpit, showing the pilot where the shooter had hit the plane. That's how the PR-63 got its nickname "Pinball".

The training bullets were special frangible rounds made of a lead/graphite combination that would disintegrate on impact.

The P-63 was re-designated as the PR-63A, repainted in bright orange and first flew on September 1st 1944.

The "Pinball" was used until the end of WWII, when remote-controlled radio technology improved. Then they were converted into radio-controlled pilot-less targets.



No drone pilots were ever injured or killed while flying the RP-63 Pinball because of friendly fire.

Did You Know? Even though the U.S. gave the Russians thousands of P-39s and P-63s during WWII, the Russians could not use them in a tank-busting role on the Eastern Front because the U.S. would not supply the 37mm Armor-Piercing (AP) rounds to them. The Russians were only given the 37mm High-Explosive (HE) rounds.

Two Quizzes

By Larry Laughlin



Quiz #1: On a V-Tailed Airplane, the Elevators are combined with the Rudder functions, mixed in such a manner so as to turn the airplane. Standing behind the airplane viewing forward, with the Left Elevator half UP and the Right Elevator half DOWN, which direction does the airplane turn?

Quiz #2: On several airplanes (the F-15 & the F-18 for example), wing mounted ailerons, if any, are NOT used to control roll rate, but rather only the elevator or stabilator halves, thereby mixed so opposite controls to one another cause the airplane to roll or turn. Standing behind the airplane, viewing forward, with the Left Elevator half UP and the Right Elevator half DOWN, which direction does the airplane turn?

No, these are not trick questions. The answers however may surprise you. We'll give you those answers at the next GM meeting.

What is Voltage Drop? (... and why do I care?)

By Mike Weidner



I got curious the other day when looking at a servo installation that was going to require a fairly long run for its lead. I was going to fabricate the lead myself and the question about wire gauge size popped into my mind.

Many have converted to digital servos since they offer improved performance with respect to speed, power, and centering accuracy. But this comes with a price as the average digital servo will consume more power than its analog counterpart. Also, bigger models require bigger, even more powerful servos – then add the dynamic loads imposed on control surfaces during 3D showoff time.

To be on the safe side I wanted to calculate just how much my flight pack/system voltage might sag under a heavy load condition for just one servo. Electrical engineers refer to the function as IR (“eye”-“are”) drop: If you know the resistance of the electrical path and the current flowing through it, you can easily determine the voltage dropped across that path. It doesn’t take a rocket scientist to figure out what might happen to the overall voltage available to other components.

So, if you get a couple of digital servos in a stalled or heavy current draw situation, the entire voltage could sag to a serious level causing a “brown out.” Some guys flying the latest 2GHz radio control systems have learned the hard way when their systems went stupid: The receivers dropped frame sync and could not maintain a failsafe condition because the voltage had sagged to a dangerously low level.

You can protect your airframe with a properly sized battery pack capacity, appropriate voltage regulation, and – the subject of this short article – the proper wire size for both power and servo leads. So I went on line and found out the resistance characteristics of a variety of wire sizes common to our hobby applications.

A graphic for my example is shown below. In my situation the servo current draw is anticipated to be 3-Amperes and the length of the run from the receiver to the servo is 36-inches. With my chosen battery pack (a 2S A123 pack) and voltage regulator, I knew a wise choice would be 20 AWG wire. Using that wire size, which is commonly

available in bulk servo wire, my comfort level got cozy knowing I would lose less than 0.2V with the servo pulling 3A. Of course, you also have to factor in the IR drop to get through the battery and switch/harness to the receiver. But that is typically short and appropriately sized heavy duty solutions are available.

IR Drop Calculations

AWG Gauge	Conductor Diameter Inches	Ohms per Foot	Calculated Results	Total Voltage Drop for Wire Length and Load Entered
10	0.1019	0.00100	0.02	
11	0.0907	0.00126	0.02	
12	0.0808	0.00159	0.03	
13	0.0720	0.00200	0.04	
14	0.0641	0.00253	0.05	
15	0.0571	0.00318	0.06	
16	0.0508	0.00402	0.07	
17	0.0453	0.00506	0.09	
18	0.0403	0.00639	0.11	
19	0.0359	0.00805	0.14	
20	0.0320	0.01015	0.18	
21	0.0285	0.01280	0.23	
22	0.0254	0.01614	0.29	
23	0.0226	0.02036	0.37	
24	0.0201	0.02567	0.46	
25	0.0179	0.03237	0.58	
26	0.0159	0.04081	0.73	
27	0.0142	0.05147	0.93	
28	0.0126	0.06490	1.17	
29	0.0113	0.08183	1.47	
30	0.0100	0.10320	1.86	

Wire Length in Inches	36	Anticipated Peak Load in Amps	3
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Should any of you get the same level of curiosity I recently had, you can go to the club website and download the Excel spreadsheet I put together. Here is the link our webmeister, Rob Waggoner, provided me:

<http://www.pprcflyers.net/Joomla/media/downloads/RDropCalc.xls>

There are only two values needed: (1) the expected length of the wire run and (2) the anticipated current load in Amps. Yes, the calculation(s) takes into

account both the outbound and return path of resistance to determine the (total) voltage drop. Remember, if you are considering the total load from more than one servo (or load source), the total current draw is additive. In other words, just add them up to get the total number.

You may be surprised to learn how much voltage might not be available in certain heavy load conditions. I know I was.

So, What is This Airplane?

By Keith Davis



Clue: It was built by the French, but became one of the U.S. Navy's first floatplanes of WWI.

Last month's picture was a Curtiss SO3C Seamew. Bill Sanderman knew what it was right away. Nice job Bill!

East Runway Repair

By Keith Davis



At the May 4th club meeting, the club members discussed the pros and cons of spending a large sum of money to repair the east runway. The biggest concern was what if the club invests up to \$25,000 in repairs just to lose the lease in a year or two?

Adam Heffington did not make Monday's meeting, but he did have some good news about the lease. Adam spoke with Mr. John Valentine, who works in the city office, Lands Department. Mr. Valentine is very familiar with PPRCC's lease situation and told Adam that someone just needs to come in to the office around May 2010, with a letter asking for an extension. How long the next extension is, I don't know. But Mr. Valentine stated that he sees no problem in PPRCC getting a lease extension.

So back to the club meeting, Larry Laughlin, the man leading the repair project, went into great detail explaining how Avery Asphalt Company would repair

all of the damage on the east runway and pit area and the minor damage on the west runway and pit area. The repairs will go something like this:

All of the large cracks in the east runway will be dug out and filled with hot asphalt. Then the filled cracks will be covered with 12 inch wide strips of Petro-Tac material. The entire runway will then be sprayed with adhesive, followed by about a 1 ½ inch overlay of asphalt, which will then be steam rolled over to make it as smooth as possible.

In addition, the edges around both runways will be built up and level with the new runway height, just like the way it was done on the west runway last year. However, that will be another \$800 to \$1200.

The bid for all of the repair work would cost \$22,900. It was the lowest bid that the EC members received but it offered the most. So it was voted on and passed 34 to 1, not to exceed \$25,000 total.

IMPORTANT! Larry has arranged to have the repairs start on Monday, June 8th, and it will take 2 to 3 days to complete. Both runways will be CLOSED for flying! I Repeat, CLOSED for flying!

And yes, we will have to paint the yellow lines back on the runways ourselves when the paving is done.

So that's the whole plan in a nutshell. I'm sure that Larry and Adam will be able to answer any questions at the June club meeting or correct anything that I may have misstated.



(East runway) - - RC Flying Field - - (West runway)

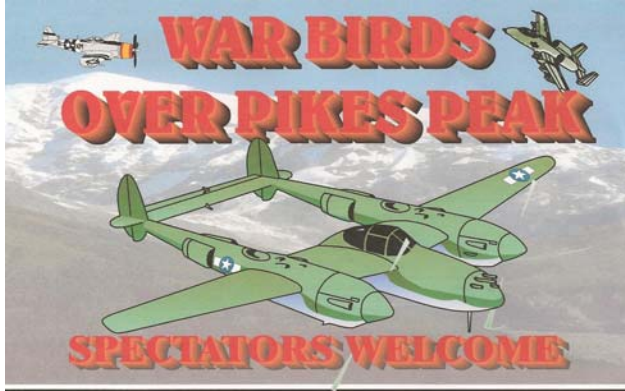
When it's all completed, we should have a top notch airfield for the next several years. Unless a plaza decides that it needs the land more than we do!

Send any pictures, articles or stories that you would like to share with the club to:

Lkdavis02@msn.com

(Keith Davis- PPRCC Newsletter Editor)

2009 PPRCC's Warbird's over Pikes Peak



HOSTED BY

PIKES PEAK RC CLUB
COLORADO SPRINGS COLORADO

JUNE 20 & 21 2009

The new CD will be Larry Laughlin
Camping and motor homes are OK
no outlets or water at the field
Runway fee \$25.00

For more information and pre registration please see
our web site.

www.pprcflyers.net

PPRCC's Scale Fly-In

By Keith Davis



Well everyone knows by now about the club's upcoming warbird event in June, but don't forget about participating in the PPRCC's Scale Fly-In on Sunday, July 19th 2009.

Rick Paquin will be the Contest Director of the event. See him if you have any questions. Any and all types of airplanes are allowed as long as they resemble a real airplane, jet or helicopter.

Three awards will be given away: Pilot's Choice, Best Scale Military Airplane and Best Scale Civilian Airplane. So if you're not into warbirds but have a scale civilian airplane to show, this event is for you!

Show & Tell

By Keith Davis



John Indelicato and his Great Skys Bampf.



Jim Terry and his 1/3 scale Space Walker.



Dan Brunson demos his Micro helicopter.



Tom McCallum with his Great Planes AT-6.

Jet Event at Love-Air, Fort Collins

By Larry Laughlin



For those that are interested, Love-Air is hosting a 3 day Jet Event, May 29th, 30th and 31st. This is the third year for this event at Love-Air (about 2 hours North of Colorado Springs) and the facility couldn't be better suited for Jets.

Jefco Aeromod'lers used to host a Jet event years ago in Chatfield State Park, but with the larger, faster jets flying, the event quickly out-grew the park, especially now with its ever narrowing flight restrictions.

Love-Air picked up the task of hosting a Jet event.



With 800 ft of smooth runway and an unlimited airspace above, the event is starting to get noticed. I promise, it's worth the drive to check these beauties out if you're interested in a variety of miniature turbine powered aircraft! RV camping is welcome or just come for the day.

Upcoming Events:

- Jun 2nd 2009 (Tuesday) – PPRC Club Meeting
 - Jun 13th, 14th 2009 - Jefco's "Warbirds Over Denver"
 - Jun 20th, 21st 2009 – PPRCC's "Warbirds Over Pikes Peak"
 - Jul 7th 2009 (Tuesday) – PPRC Club Meeting
 - Jul 19th 2009 (Sunday) – PPRCC Scale Fly-In
 - Aug 4th 2009 (Tuesday) – PPRC Club Meeting
 - Aug 29th, 30th, 31st 2009 – Denver's "Warbirds Over the Rockies"
 - Sep 4th, 5th, 6th 2009 – Sky Corral's "Warbirds Over Pueblo"
 - Jan 1st 2010 (Friday) – PPRCC's Frozen Needle Valve Fly-In
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