67 YOUNG EAGLES FLOWN YEAR TO DATE

September 2019

Home of the "Panhandle Pelicans"

Squawk 485

EAA 485

Monthly Meeting Ferguson 82J
Saturday August 10th @ 1000
Details

President

John McKiernan
rockyjs7jm@gmail.com
Cell - (850) 291-4134

Hello Everyone,

Well I thought we were actually getting some cooler weather but this first week of September has the mercury heading the wrong way! With that said cooler temperatures are on the way and the visibility should be improving. We are also approaching the final Fly-In season.

RAY AVIATION SCHOLARSHIP UPDATE

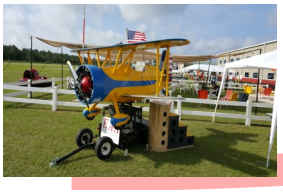
Ralph Moser, Chapter 485 Coordinator

Nick Hanssen is fast approaching his private pilot practical exam ! All the regulatory cross-country, night flying, and minimum hour requirements are complete. He has about 50 flight hours total at this time. He is now doing final ground review and practice checkride(s) with Christian at the flight school. Then it depends on the examiner's schedule availability. Nick hopes to be wrapped up by the end of September. We expect to hear a short update from our Ray Scholar at the September meeting on his experiences so far.

President McKiernan convened meeting at 1015, 18 attendees.

Pledge.
Motion for new flag, approved
Motion for Chapter Graphics sign, approved.
Current CH 485 assets. $9271.17 including $3560.30 in Ray Scholarship funds.
Window coverings procured and installed, Nice job John.
Discussion of Continental Motors Field Trip, pending their setup in new facility.
Pres briefed new Rusty, simulator program and exposure.
DeWitt and Donna Barker have graciously consented to setting up a "VMC Club" for the Chapter.
ICAO flight plans are in effect and were discussed. DeWitt Barker related his experience with ICAO flight plans.
Ralph Moser briefed Ray Scholarship Progress. FAA written pending.
Pilot shortage and cost to get trained were dis cussed at length.
Basic Med was discussed at length.
Project Updates
Duane Thiessen discussed his experience with trying to take over/rebuild a partially complet ed project.
Three prospective members were introduced.
Oshkosh 2019 experiences were discussed at length.

Mark Rogers
Sec/Treas



Our chapter bank account recently received and deposited the final $2000 of Ray Scholarship money from EAA. So the entire $10,000 has been received. I recently paid for Nick's $165 written exam fee, and all his flying through 9-3-19. As of that date, $6411.05 of the Ray funds have been spent. I scan and send copies of all receipts to Mark Rogers, who cross-checks the Ray spending.

Two subjects came up recently in a 8-21 letter from David Leiting, the EAA national Ray coordinator. One was proposed changes for next year's' program, with a survey for chapter inputs. We submitted said inputs; I will review our input at the September meeting. The second subject had to do with remaining funds for this year's program. He established a cutoff date of Nov. 1st for successful chapters, whose scholar pass their checkride before Nov. 1 with funds left over, to submit a second scholar. This option will only be available as long as funds remain.

So our near-term priority at chapter 485 will be to make every attempt, as soon as Nick "graduates", to get a second Ray scholarship. More on this at the September meeting. Then around November, the whole process starts over for 2020."

VMC Club

The chapter has some new announcements to make. During the August meeting Donna and DeWitt Barker volunteered to coordinate the chapter VMC Program. We're looking for additional people to participate. Any EAA member can join the group. If you're interested contact Donna Barker. A big thank you to Donna and Dewitt for volunteering

Young Eagles Coordinator

Following the meeting last month Ralph Moser volunteered to be out Young Eagles Coordinator. Bill Diaz also will be working alongside Ralph as his right hand man. Ralph is eyeing having an event on October 26th at our clubhouse.. More information will be provided following our meeting Saturday, September 14th.

A change was recently made about Young Eagles credits. Before you needed to have 10 or more Young Eagles flown in a calendar year to receive a $5 credit for each Young Eagles flight flown. That threshold is now lifted so even if you fly 1 flight the chapter receives a $5 credit to be used towards our Young Eagle program.

Fly-Ins

In October, two well attended Fly-Ins are scheduled. The first, Thomasville, GA KTVI, Oct 11-13. We normally have several members attend Thomasville which this year is taking place on the second weekend of October. The second Fly-In is SERFI in Evergreen, AL KGZH Oct 18-20. From the preliminary meeting at SERFI we've been tasked to participate in Young Eagle flights.

Chapter 485 normally has a lot of volunteers at SERFI and for years coordinated and flew Young Eagle flights along with other things. We no longer administrate the YE program but have pilots that fly Young Eagles. There is a final meeting on September 28th up Evergreen which I plan on attending. I'll be sending out a separate info sheet following the meeting.

ELECTIONS

We will be having elections this coming November. We will be electing all new Officers for two years effective January 1, 2020. Robert Ermer and I have been in office since January 2012. Mark Rogers has been our Secretary/Treasurer since 2016. We would like to have a separate Secretary and Treasurer so need to fill 4 slots.

The chapter needs new faces, new ideas and new Leadership to take the chapter where no chapter has gone before. Our process will be to collect nominations beginning **NOW** and hold an **election during our November meeting**. This will allow sufficient time for a good turnover. I personally want to thank Mark and Robert for their dedication to the chapter.

All nominations should be submitted to

Mark Rogers and simply give a name and position(s). For example if I wanted to nominate Joe Schmuckatelli (we really don't have Joe in the chapter) for any position you would simply put his name and state ALL POSITIONS. We need volunteers and don't be bashful about nominating yourself for a position.

I believe I can speak for both Mark and Robert that we will be active in the chapter. For now I plan on continuing to have Thatcher build nights and be the caretaker of Rusty. What truly takes most of my time is this newsletter. I would like to be more of an editor than a one armed paper hangar. We have nearly 70 members with lots of stories and experience. If you have a project update write a short description of what's going on. Send it in on Word or a simple text file.

Continental Motors Tour

I checked with Neal George and although they are in the new offices they still haven't begun operations in the new facility. They've had a few setbacks but hopefully they will be up in operation in October. That doesn't necessarily mean they will be conducting tours so we're still in a holding pattern.

A C130 Story

After finishing my Navy Pilot Training in Texas, I was assigned to VQ-4 at Patuxent River, MD. I also needed training and since the C130 Navy community was so small the training was provided by the US Airforce in Little Rock, AR, It turned out to be a very good deal for me.

At Little Rock I was in a class of around 30 pilots and the junior officer of the group, a "Butter Bar" Ensign. There was a "salty" group of about 10 "students" from Air National Guard units who were all Captains. They were upgrading from the A model gunship to E. I was paired with a Marine Captain, Nick Wierich who was transitioning from H-53s to the Herc. Not an easy transition

We did ground school for a couple weeks and then went to simulators. After that we flew I believe 7 training flights lasting about 4 hours each. Nearly the entire class was quartered in the BOQ and we had a lot of good times going through training. Of course, those Guard Boys knew the airplane in and out so they didn't have to hit the books very much.

Well it was August in Little Rock and the ramp temperature was always above 110 degrees. On about the 4th flight we were scheduled late due to an instructor conflict. Our instructor Buddy was really relaxed and never raised his voice. Nick wasn't feeling well and flew first. The air was rough and I was amazed that we were getting tossed around a good bit. After he got done, I jumped in the seat, it was soaking wet. Nick left the flight deck to use the head and was gone a long time.

When Nick returned he looked like 10 miles of bad highway. Buddy asked him if he was alright and should we go back to Little Rock. Nick said he was OK "Ooh Rah". After the flight and debriefing Nick told me he was on the toilet "honey bucket" for about 20 minutes bouncing around in the tail section of the aircraft but now was feeling better. We got back to the BOQ, grabbed a beer and started to play a game of pool and talked about the flight. A few minutes into the game a person from the front desk stuck his head in the Recreation room and asked if their was a Capt Wierich there. Nick had a telephone call. He came back about 3 minutes later cussing and fussing. He told me he had to go back to the plane and clean the "honey bucket". I couldn't help but start laughing. I did go with him back to the ramp but stayed in the van. Poor Nick had to go inside this hot as hell C-130 and remove his you know what from you know where. He came out a few minutes later and someone on the ramp pointed the location where he should deposit his bagged trophy. I asked how bad it was inside the airplane and he just gave me a death stare. By the morning he even could laugh about it. Of course the story spread like wild fire throughout the BOQ. He never ever used the "Honey Bucket" again.

Torque Revisited

I promised a torque chart and below is the best I can do. This is a common power chart for a Lycoming O-360 180 HP engine rated at a maximum 2700 rpm. Remember that Torque is measured and Horse Power is computed and peak torque is reached prior to peak HP. Torque is based on the volume efficiency of the cylinders and when the rpm goes above the most efficient point torque reduces followed by HP. With that said we'll use the chart below that shows a Lycoming O-360-180 HP engine with a constant speed propeller. The chart is divided in 3 different power sections: 75%, 65% and 55% . It is further separated by different RPM values. I have computed the torque the engine is producing at the HP and RPM indicated. If we operate the engine at 55% any combination of Altitude, Manifold Pressure and RPM will yield the exact same horsepower in the group. but different torque values due to rpm differences. **Torque = HP x 5225/ RPM HP = Torque x RPM/ 5225**

POWER SETTING TABLE				Lycoming	Model	O-360-A,		180 HP	Engine			
		99	**HP**	55% Rated		**117**	**HP**	65% Rated		**135**	**HP**	75% Rated
Press.			Fuel ~	7.4 GPH			Fuel ~	8.8 GPH			Fuel ~	10 GPH
Alt.												
1000	**Torque**	**246.3**	**235.1**	**224.9**	**215.5**	**291.1**	**277.9**	**265.8**	**254.7**	**320.6**	**306.7**	**293.9**
Feet	Temp	2100	2200	2300	2400	2100	2200	2300	2400	2200	2300	2400
			Man Pressure				Man Pressure				Man Pressure	
SL	59	20.9	20.3	19.8	19.3	23.3	22.7	22.1	21.5	25.1	24.5	23.9
1	55	20.7	20.1	19.6	19.1	23.1	22.4	21.8	21.3	24.8	24.2	23.6
2	52	20.4	19.8	19.3	18.8	22.8	22.1	21.6	21.0	24.6	24.0	23.4
3	48	20.2	19.6	19.1	18.6	22.5	21.9	21.3	20.8	24.3	23.7	23.2
4	45	19.9	19.3	18.9	18.4	22.3	21.6	21.1	20.6	24.0	23.5	22.9
5	41	19.7	19.1	18.7	18.2	22.0	21.4	20.9	20.3	23.8	23.2	22.7
6	38	19.5	18.9	18.4	18.0	21.8	21.1	20.6	20.1	FT	23.0	22.5
7	34	19.3	18.7	18.2	17.8	21.5	20.9	20.4	19.9		FT	22.2
8	31	19.0	18.4	18.0	17.6	21.3	20.7	20.2	19.7			FT
9	27	18.8	18.2	17.8	17.4	FT	20.4	20.0	19.5			
10	23	18.6	18.0	17.6	17.2		FT	19.8	19.3			
11	19	18.4	17.8	17.4	17.0			FT	19.1			
12	16	18.2	17.6	17.2	16.8				FT			
13	12	FT	17.4	17.0	16.7							
14	9		FT	16.8	16.5							
15	5			FT	16.3							

Piston Speed and Miles

We normally don't think much about piston miles or the speed the piston moves in an engine. But it is an important issue to the health and wear of any engine. The piston is abused each revolution of the crankshaft. Its function is to convert the explosive ignited fuel/air mixture charge into rotational power at the crankshaft. There are four cycles the piston goes thru: Intake, Compression, Power and Exhaust. It is heated, cooled, loaded and unloaded along with the connecting rods and bearings and crankshaft.

The piston is moving the length of its stroke (as defined by the crankshaft journal) twice for each revolution and also coming to a dead stop twice and reversing direction. Constantly going through accelerations and decelerations. So we're going to take a closer look at what's going on.

The Lycoming O-360, O-540 and O-720 use the same cylinders. It's a big family and the cylinders displacement is approximately 90 Cubic Inches. So for our use although they produce different torque and horsepower they have the same specs and function identically.

The cylinders have a bore diameter of 5.125" and stroke of 4.375". We want to know the piston speed at a pretty common cruise RPM of 2400.

To find the **average speed** of the pistons we first find the feet the piston travels in 1 minute FPM. We simply plug numbers in to the following formula:

RPM x Stroke / 6 = FPM

2400 x 4.375 / 6 = 1,750'
(We divide by 6 instead of twelve because the piston travels twice its stroke length in one revolution.)

Now we solve for the MPH:

FPM x 60 / 5280 = MPH

1750' x 60 / 5280 = 19.9 MPH.

This is the average speed of the piston but we're also interested in it's maximum speed. To do this we need to look at the rotational portion a bit more. We also know that the mean speed of 19.9 MPH has two specific points during each crankshaft rotation where there is no speed. To compute the maximum speed we now have to bring a geometric constant into a formula, PI (3.14). Since we know the crankshaft journal is responsible for the stroke we can use it's circular motion to get a very close number to the maximum speed the piston travels. What we are computing is the distance the rod journal of the crankshaft moves for each rotation. In our case it is 4.375*3.14 = 13.74" per revolution.

Solving for Maximum Piston Speed:

Stroke x PI (3.14) /12 x RPM = FPM

4.375 x (3.14) / 12 x 2400 = 2,748'

2,748 x 60 / 5280 = 31.2 MPH

For each stroke of our engine at 2400 rpm the piston accelerates from a dead stop to 31.2 mph and decelerates back to zero.

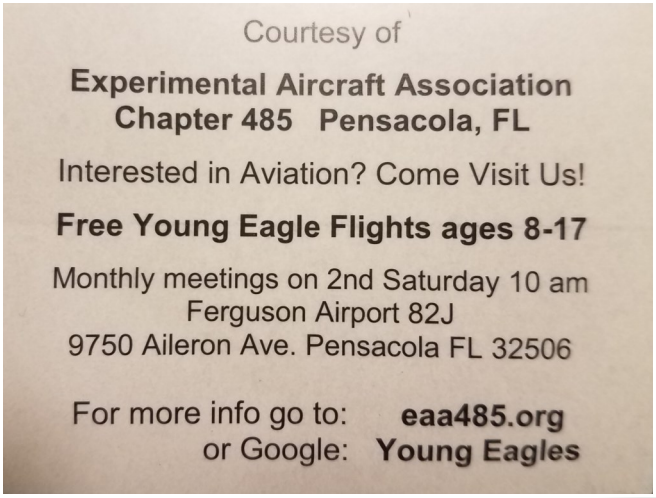
So now we have a much better look at what is going on inside our engines with respect to the reciprocating parts. There are some very large forces working on the pistons, connecting rods and crankshaft and their associated bearings.

EAA 485 Ballcaps

We have chapter ballcaps available for **$15**. Just let us know and we'll get one to you.

Slightly Read Aviation Magazines

We have labels available in the clubhouse to place on your recently read and unwanted aviation magazines. Slap a label on it and drop them off at your nearest elementary, middle or high school. Also a local library might be interested in getting them. Another place is your friendly dentist, doctor, barber, hairdresser. There is a box of labels on the bookcase shelf at the clubhouse. Help spread the word especially to our youth. If you're not familiar wit the labels here is a pix.



Thatcher

We're moving along slowly on the canopy. We've decided to go with a tilt and after doing a rough trim on the plexi made up the two major side rails made from 1/8" 1" aluminum angle. The next step was to make the aft support.

We got some 1/2" steel EMT to use for it's strength and we're not taking too much of a weight penalty after giving up the heavy drawer slides. We made a cardboard template of the turtle deck and then reduced that by 3/4" on the outside to allow for the EMT and a slight wiggle space. The template was transferred to some particle board and cut with a saber saw. We attached the pattern to the table and uses a cutoff piece to hold the top and hand bent the EMT.

The radius bend around the top was perfect until we got down the sides. Trying to bend it to the form wouldn't work as there was some spring back. We needed to attempt to free bend it outside of the jig and that worked and we got so very close. We needed another 1 1/2" and were using a ratchet strap. Jonathan figured out using some vinyl hose to protect the tubing on the hooks. It was working forming a nice radius:

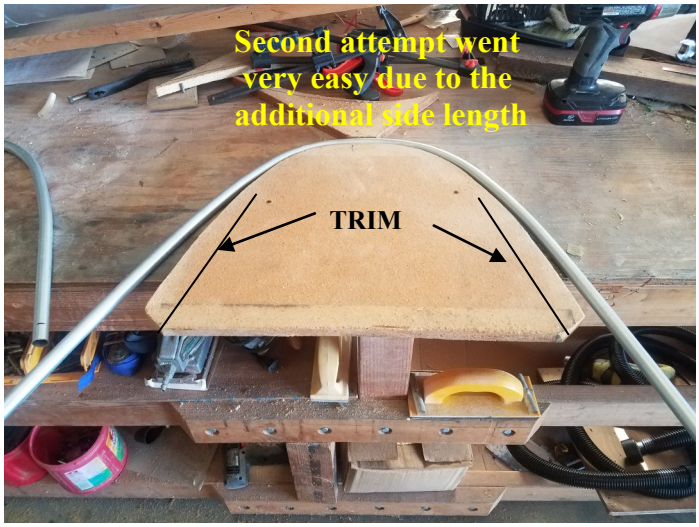
Just a little more!!

Then it happened. We got a little kink probably caused by a stress point initially from the pattern.

We started with a 10' piece of EMT and still had plenty to try again but it was late so we called it quits to come back and fight another day.

I was working at the hangar and kept looking at the EMT bow. There was really no way to get the kink out and fooling with it would weaken the tubing. I picked up the leftover piece of EMT and marked the center and chucked it into the jig and hand bent it easily due to the length of each

side. We had earlier trimmed the original close to the actual length which made it very hard to bend once past the top bow.



The pattern we're using is going to need some trimming. We need to be able to over bend so the spring back will give us the proper shaped.

The second attempt came out pretty good. We did manage to have a slight irregularity in the bow. I had called Rob and Vera Clarkson next door to my hangar and left a message that I needed to borrow a tool. About quitting time Rob came over and asked what we needed. He's a retired electrician and has some EMT benders. We needed his 1/2" bender to tweak the bow and I told him I'll get it in the morning. Ten minutes later he was back with it, thanks Rob.

We played with it for a while and got the second bow just about perfect. It needs to be flush to slightly (1/8") below the turtledeck skin to allow us to glue the canopy on. We're planning on using Sikaflex, the same product I used to glue my RV-7 canopy with.. You use garden hose washers as spacers every 6 inches or so to give about 1/8" joint thickness. The next day after the Sikaflex cures you remove the washers and fill the void left behind with more of the product.

Once the aft bow is good enough for prime time we'll do a partial assembly of the rest of the canopy frame and check the articulation.. We still need a valid solution for the front bow and how we plan on sealing against the windshield up front.

Oh! I also purchased another piece of EMT just in case because well, you know!

September 2019

EAA 485 news

Ben Poffenberger's new toy 2003 RV-4

We got to working on our front access panels which is way overdue. Keith Albee will be happy. We had a few tries at getting this correct. These panels give us access to the rudder pedals and fuel tank connections. AN-3 flush rivets will be used on the outside holes for the recessed structure and number 8 nutplates for the panel attachments.

The panels have a very good fit. The right side is still to go and will be done on the next build night.

Squadron 485 New Acquisition

There is a new stallion in the corral added by chapter member Ben Poffenberger. I recently took a look at it with Ben over at PAC. Powered by an Aerosport 0320-160 HP engine dual Pmag ignitions and a Cato composite prop. It sports a large GRT EFIS display and dual axis autopilot. It's also ADSB In/Out equipped with a Trig 22 txpdr and Stratux dual channel receiver cleverly mounted under the skin with only antennas protruding on the aft turtledeck under the canopy. Like all 15 year old airplanes there are some TLC items Ben will be busy with but mostly fairing issues.

Ben has an electrical schematic that is not current with what is in the aircraft today. Not unusual for homebuilts or any other aircraft for that matter. I don't see many aircraft with wire labels and current schematics. I suggested a few things for Ben to do such as tracing everything. After a few items are corrected Ben will have a very sweet ride. Look for it soon at chapter meetings and around the area.

Congratulations Ben!

September 2019

EAA 485 news

2019 Officers and Committee Chairmen

President/ Newsletter John McKiernan (850) 291-4134
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EAA and Local Chapter Sites

EAA 485 EAA 1265
EAA HDQTRS EAA 108
Lite Blue Angels EAA 105

Interesting Links
Blue Angel 360 Way cool
Drone Weaponry
Build Your Own ADSB Receiver
F-18 Low Level

Miscellaneous
FAA Notams
Thatcher Build Site
Barnstormers
Skyvector.com Flight Planning, Charts
AirNav.com Airport info, Fuel Prices

Barin OLF ASOS 251 970-2469

Normally meetings will be held at Ferguson Airport (82J) (Uni **122.8**) on the **Second Saturday** of each month at 10:00 AM unless otherwise posted. Please check the if flying in for important info.

Go past the main airport entrance and take the next left. Go thru the gate and make a left on the gravel road. Make a right past the T hangar you'll see our building down on the left side. Anyone interested in general aviation and building or restoring aircraft are welcome.

For more info contact:

John McKiernan 850 291-4134
rockyjs7jm@gmail.com

Home Of The
PANHANDLE PELICANS

EAA 485 Pensacola, FL

2019 82J Monthly Pancake Breakfast Sched
Sep 21st, Oct 19th, Nov 16th, Dec 21st.

Send email changes and bad newsletter links to John rockyjs7jm@gmail.com

Unsure about Tefzel 22759/16- wire current capacities. Here's an easy chart to follow.

Wire Size (AWG)	Current Rating*	Insulation Diameter (Inches)
24 Gauge	5.1 amps	0.045"
22 Gauge	6.3 amps	0.052"
20 Gauge	8.9 amps	0.060"
18 Gauge	11.4 amps	0.071"
16 Gauge	13.9 amps	0.079"
14 Gauge	17.7 amps	0.095"
12 Gauge	24.0 amps	0.120"
10 Gauge	32.9 amps	0.138"

* Current Rating is based on continuous duty for wires in bundles, harnesses, or conduit at sea level.

Trivia:
Tiny Tim AKA Herbert Buckingham Khaury got married on the Tonight Show in 1969 with 45 million people watching, What was the name of his wife? What was his big hit?

Public ADS-B Performance Report Request

Get a performance report from the FAA on your ADSB equipment performance.
https://adsbperformance.faa.gov/PAPRRequest.aspx

PAPR User's Guide

https://adsbperformance.faa.gov/paprusersguide.pdf

Answers:
Miss Vicki
Tip Toe Through the Tulips

2019
Events Calendar

Saturday Sep 14th, 1000
Place: EAA 485 Clubhouse

Pledge
Introductions
Guests
Ralph Moser Scholarship Update
Young Eagles Rally Oct 26
Continental Motors Tour
New Facility Still Not Operational
SERFI (Meeting Sept 28) Inputs??
VMC Club Signup with Donna B
Member aircraft/project update
New Business
SEP Chapter Video

Lunch $5 suggested donation

Calendar

Future Meeting Dates:

Oct 12th conflict with Thomasville
Nov 9th
Dec 8th

Fly Ins:

Triple Tree Fly-in	**SC00**	**Sep 2-8**
Thomasville, GA	**TVI**	**Oct 11-13**
SERFI	GZH	**Oct 18-20**
Blue Angels Homecoming		**Nov 8-9**

2004 RV8A Total Time 400 hours airframe and engine since major overhaul $85K

Lycoming IO-360 180 HP Sensenich fixed pitch prop
Well built and maintained aircraft. Complete engine and airplane logs. Condition inspection August 2019 - Will be sold with new annual.
New PC680 battery
Complete Dynon 10" Skyview System:

- Full EMS system (CHTs & EGTs, Fuel Flow, RPM, MAP, Oil Press , Oil Temp, Fuel Press, OAT
- Dual axis autopilots with electric elevator trim
- SV Knobs Panel
- SV Autopilot Panel
- Dynon SV-472 ADS-B-In Dual Channel Receiver

Stratus ESG ADSB-Out transponder Installed September 2017
Microair Com #1
Garmin 300XL GPS/Comm #2 (enroute and non-precision IFR certified)
Garmin GMA 240 Audio Panel.
No Nav at present however tail VOR antenna and coax cable run to instrument panel
Great Instrument panel setup
2 ¼" backup Airspeed , Altimeter, Vertical Speed
Separate Lift Control pneumatic stall indicating system.
Rear seat rudder pedals. (currently uninstalled)
Ram mount for tablet.

This is a sweet flying economical aircraft at 8500' leaned it flies 150 kts TAS @ 8.0 gph

Contact: John McKiernan 850 291-4134 rockyjs7jm@gmail.com