DELTA AMATEUR RADIO CLUB founded 1961

SPARKS

P.O. Box 342768 * Memphis, Tennessee 38134-2768 * Volume 22 * January 2016



Welcome to the Delta Amateur Radio Club

Visit our home on the web at: http://www.deltaclub.org EMAIL: darc4you@gmail.com

Facebook: https://www.facebook.com/darcmem

W4BS

REPEATER SYSTEM

Club Meetings (7:00 PM, 2nd Tuesday of each month)

NEXT DATE: January 12, 2016

PLACE: Ellendale Church of Christ, 7365 Highway 70

Memphis, TN (1 ½ miles north of Hwy. 64 – Stage Road)

PROGRAM: Jack Parnell, K4BSI, a long time ham, DJ, voice-over professional,

and Delta club president in 1964, will be speaking on the history of

the Delta club and related topics.

FCC Amateur Radio License Testing: Delta Club FCC testing sessions are held every month except December. Registration begins at 5:30 PM and testing begins by 6:00 PM. Please remember to bring two (2) forms of identification, at least one a photo ID, and copies of any existing licenses or CSCE's you might have. You need to know your FCC Registration Number (FRN) if one has been issued. Please be on time for registration; this is to allow our Volunteer Examiner (VE) team to finish in time to attend the club meeting. 2016 test fee is \$15 (cash or check). Individuals who successfully test for their initial FCC license grant at a Delta Club test session or through a Delta Club training class will receive a complimentary individual club membership for the remainder of the current calendar year when they also show proof of ARRL membership. For more information, please contact:

Jeff Krause, AJ4GY - VE Liaison Phone: 901-301-6776 Email: AJ4GY@comcast.net

There was no testing at the December, 2015, Delta club meeting due to the Christmas party.

President's Corner

Submitted by Ken Laseter, KI4AOH

Just about time I get to where I can write 2015 on my checks rather than 2014, someone yells "Happy New Year", and I have to start all over. Well, Happy New Year to everyone and I hope all your Christmas wishes come true. We all know you deserved them.

As this year's president my first order of business is to humbly and sincerely thank you for this privilege of serving. You should know, I am intimidated by the experience, professionalism, talents, and knowledge represented by you, our membership. I still feel like a kid in the presence of many of you who have been in ham radio for 20, 30, 40 or more years. You have had many experiences and formed friendship that I truly envy. You have truly forgotten more than I will ever know about ham radio.

With that said, I probably should close for now. But before I do let me say that we continue to need volunteer net control operators and could use a few more volunteers for this year's Swamp Stompers marathon event. Please check the Sparks newsletter for details and contact information.

Thanks so much, 73.

Thanks to the 2015 Board of Directors

Submitted by Dan Lasley, NE7JN

I invite everyone to take a minute at the next Delta club meeting to say a word of thanks to the 2015 board members and to the repeater trustee for their efforts to make the Delta club a great place to learn and to enjoy the camaraderie of the ham community. I would especially like to thank those board members who are leaving their positions: President, Joe Wray, WD4GXI, Treasurer, Rick Tillman, WA4NVM, Director of Publications, David Webb, KV4QI, and Director of Meetings & Special Events, Jim Sheats, KK4VGL.

The new board members for 2016 are President, Ken Laseter, KI4AOH, Treasurer, Linda Laseter, KJ4CTX, Director of Meetings & Special Events, Steve Frazier, KK4VPT, and Director of Publications, Dan Lasley, NE7JN.

Thanks to David Webb, KV4QI, for his excellent work on the newsletter and for making my transition to his position simple and straightforward.

See the section entitled **SPARKS Newsletter & Delta Club Information** (below) for the complete list of board members and the repeater trustee for 2016.

Treasurer's Report

Submitted by Rick Tillman, WA4NVM

Beginning Balance	as of Decen	nber 1, 2015		\$7,700.66				
Expenses								
Tom Raggett Yearly Donation A R Tillman	Ellend	Hams for Dec. Meeting Ellendale Church HamWan Project						
			Total Expense	\$2,208.11				
		Income	SubTotal	\$5,492.55				
Membership Dues Donation (cash) Trailer Sale	Y	ear 2016		\$465.00 \$55.00 \$2,000.00				
			Total Income	\$2,520.00				
Ending Balance	as of Decen	nber 31, 2015		\$8,012.55				
Submitted by Rick Tillman WA4NVM								
Certificate of Deposit #1		Balance		\$10,280.23				
Certificate of Deposit #2		Balance		\$5,050.13				
Total DARC Assets		Balance		\$23,342.91				

Board Meeting Minutes

7:00pm, January 5, 2016 - Submitted by Barri Munday, WB4SWP

Board members in attendance: Linda Laseter, KJ4CTX, Ken Laseter, KI4AOH, Steve Frazier, KK4VPT, Joe Lowenthal, WA4OVO, Barri Munday, WB4SWP, Jim Cissell, KI4I, Dan Lasley, NE7JN, Bill Stevens, WC9S, and Michael Knight, KK4IOH. Ex-officio members in attendance: David Webb, KV4QI, and Rick Tillman, WA4NVM.

The Meeting was called to order by Ken at 7:00pm.

Ken requested help revising the By-Laws and creating a Mission Statement.

Linda presented a proposed budget for 2016. Michael moved to approve the budget, seconded by Joe. The Board unanimously approved the budget by acclamation. The budget will be presented to the club at the February meeting.

Joe on training: an Extra Class is to begin January 9th for 6 weeks but no class on January 31 due to the Jackson, MS, Hamfest. A General class is to begin on February 27 for 6 Saturdays (excluding March 12) with testing at Freefest. A Tech class is to begin in February; its start date is to be determined.

Delta will arrange for a bus to the Huntsville Hamfest in August.

Jack Parnell, K4BSI, will be the guest speaker at the January meeting with Gary Woodall, KD5WUT, as the guest speaker at the February meeting. Michael Knight will talk about repeaters at the March meeting.

Ken is looking for a club member to be the Delta club historian. If you are interested in helping, please contact Ken.

Michael Knight will be speaking to the club about Field Day to be held on June 27th at the Germantown Pickering Center area near the horse show ring.

Linda presented the Treasurer's report.

Ken proposed acquiring a portable sound system for monthly presentations; Jim is to research equipment.

Linda discussed in detail the legal issues presented by the November prize drawing. These issues include problems with significant expenses and paperwork. Joe made a

motion to discontinue the prize drawing; Michael seconded the motion. The details will be brought before the club in the January meeting.

Danny Banks' request to use Delta's 146.82 repeater for the Swamp Stompers event was approved.

Jim moved to adjourn the meeting at 8:30pm; Barri seconded.

General Club Meeting Minutes

December 8, 2015 - Submitted by Barri Munday, WB4SWP

We had an abbreviated formal December meeting. Ham Hilliard, W4GMM, moved to accept the meeting minutes as printed in SPARKS, seconding not recorded. Ham also moved to accept the Treasurer's report as printed in SPARKS, seconding not recorded. The formal meeting was adjourned and the club members, families, and guests enjoyed the camaraderie of the ham community and great food!

Amateur Packet Update

Article Submitted by James Butler, KB4LJV

West Mountain Radio has come out with some new DC power distribution equipment. The RIGrunner series uses the Anderson Powerpole connectors. They include multiple Powerpole outputs along with fusing for the separate outputs. They also have models with USB charging ports, audible alerts for high or low voltage levels, and 3 digit voltage display. They have models with 4 to 12 power port outlets. This provides for standardization of DC power for emergency and portable use of our equipment. West Mountain Radio continues to design new improved versions. If you need a DC power distribution panel check out all the models at West Mountain Radio. Their web address is http://www.westmountainradio.com.

Amateur Hardware Update

Photo and Article Submitted by James Butler, KB4LJV

Many times we use oscillators in ham radio. The 3525 PWM chip is the perfect chip for making oscillator projects. Ebay has the complete project built on a circuit board for about \$2.00 with free shipping. You can download a PDF data sheet for the 3525 chip by typing "3525 PWM chip" on a Google search. The circuit board has the completed circuit and adjustment potentiometers for a waveform of 10 HZ to 10,000 HZ. The duty cycle of the waveform is also adjustable. Three connections are for power in, ground, and output waveform. The board is easy to use and makes a great Morse code practice oscillator. If you have an oscillator project, try this board from Ebay. Do an Ebay search for 3525 PWM board.



Figure 1: 3525 PWM board

Delta Ham License Training 2016

Submitted by Joe Lowenthal, WA40VO

There is no charge for classes, but the student is responsible for the purchase of the license manual and the \$15 ARRL FCC examination fee.

Licenses Earned in 2015 from Delta Classes

32 Technician 11 General 7 Extra

If you are interested in attending a training class, send an email to Joe Lowenthal at wa4ovo@gmail.com with the desired class name in the subject line, along with your name, email address and (cell) phone number in the text.

Classes Scheduled

Extra Class 1-16 - January 9 - February 20, 2016

This Extra Class license class is starting on January 9th for six Saturdays from 9am to 1pm at EMHC ambulance company training room, 6972 Appling Farms Parkway. There will not be a class on January 30th due to the Jackson MS hamfest. Eight hams are registered for the class.

General Class 2-16 - February 27 - April 9, 2016

This General class is scheduled to start March 5th for six Saturdays from 9am to 1pm at EMHC ambulance company training room, 6972 Appling Farms Parkway. There are currently four signed up for the class. If you are interested, send an email to Joe Lowenthal at wa4ovo@gmail.com with General Class in the subject line and name, call sign, email address and cell phone number in the text.

You may want to do some pre-study by going to www.KEOOG.net The right side has links to Technician, General and Extra Class YouTube video training.

Alternative approach: If you want to check on class availability and/or to register for a future training class, go to URL www.deltaclub.org and click on the link under Training – registration form will guide you through needed information, and EMAIL will be automatically sent.

We offer our continued thanks to EMHC ambulance company for generously providing their training room for the many ham radio classes given there.

Classes Completed

Tech Class 5-15 - November 9 - December 14, 2015

Tech Class 5-15 was held on six Monday nights from 6:15-9:30pm from November 9th through December 14th at EMHC ambulance company training room, 6972 Appling Farms Parkway. There were 11 students in the class with two Technicians auditing.

Congratulations to Scott Adams KM4PMU, Gaylon Brown KM4PMV, Chris Cooper KM4PMW, Ben McElravey KM4PMX, Luke McElravey KM4PMY, Tina McElravey KM4PMZ, David McElravey KM4PNA, David Seaman KM4PNB, Chuck Sullivan KM4PNC, Kevin Zent KM4PND, and Brad Grissom KG5KSW on earning their Technician licenses. Additional congratulations to Gaylon Brown KM4PMV and Kevin Zent KM4PND for also earning their General license.



Figure 2: Proud McElravey family with their CSCEs: Ben KM4PMX, Luke KM4PMY, Tina KM4PMZ, and David KM4PNA. Photo by Joe Lowenthal WA4OVO.

The Tech Class 5-15 instructors were Pat Lane W4OQG and Joe Lowenthal WA4OVO. The two Elmers were Tom Ernst N4LIA and Len Grice KM4RMY. WCARS VEC team of Gary Weatherford W5EMA, Jeff Krause AJ4GY, Ham Hilliard W4GMM, Rosalina Melena WN2V,

Steve Smith W5VAA and Joe Lowenthal WA4OVO provided the opportunity for FCC testing on December 7th.

Tech Class 5-15 equipment presentations/demonstrations were held on December 14th. The presenters were Joe Lowenthal WA4OVO on Echolink, D-STAR, Fusion and Allstar; Rick Pellicciotti on APRS; Rick Tillman WA4NVM on FM satellites; and Pat Lane W4OQG on HF long-wire antenna, WinLink and MARS.



Figure 3: Rick Tillman WA4NVM working the bird. Photo by Len Grice KM4MRY.

Nashoba Amateur Radio Club Technician Radio Class

Submitted by Jelly Thompson, N4HLT

This seven-session class will use live ham radio equipment. Topics include:

- Training on how to operate through local radio repeater systems.
- Multiple choice examination with no Morse code test required.

Homework between sessions will prepare students to pass the amateur radio Element 2 Technician test. A class examination and Technician test will be given on the last night of the class for those wishing to test at that time.

Class schedule: Thursday evenings, January 28 to March 10, 2016 (7 sessions), 6 to 9 p.m.

Location: Germantown Fire Station 4, 3031 Forest Hill Irene Road, Germantown, TN 38139.

Fee: FREE instruction. \$15.00 FCC examination fee when you decide to take the test (a testing session will be offered the last night of class).

Required Materials: Gordon West 2014-2018 Technician Study Manual (~\$25). You may buy the manual on line or order it at registration and pick it up the first night of class.

This class is limited to 24 people, first come, first served.

Registration: pre-registration is required. Go to this link:

 $\frac{https://docs.google.com/forms/d/1NOQ-j7iuhp\ hqZNNU8FWM3P5zV\ IBKpvcGBFle7Cl-c/viewform?c=0\&w=1\&usp=mail\ form\ link$

For additional information contact Jelly, N4HLT, at 901-606-5067.

2015 Ham of the Year and New Ham of the Year

Submitted by Dan Lasley, NE7JN

The Delta club's 2015 Ham of the Year award goes to Joe Lowenthal, WA4OVO, and the New Ham of the Year award goes to Barry Pilkinton, KM4KSN.



Figure 4: Joe Wray, WD4GXI, presenting the 2015 Ham of the Year award to Joe Lowenthal, WA4OVO.

Barry was unable to attend the December meeting. We will have Barry's photo in a later issue of Sparks.

The Lancaster/Marston Corner

Submitted by Dan Lasley, NE7JN

I'm beginning a new column this month for those of you interested in electronics. Lancaster/Marston refers to the works of Don Lancaster and Ray Marston, both of whom published extensively in various electronics magazines. In addition, Lancaster published a number of books on both analog and digital electronics. Both authors write well and are excellent designers. This column isn't just about Lancaster and Marston; we'll cover other authors as well.

In this month's column, I want to introduce you to on-line repositories of two magazines, Popular Electronics and Electronics World:

http://www.americanradiohistory.com/Popular-Electronics-Guide.htm

http://www.americanradiohistory.com/Electronic World Master Page.htm

Both web pages have a good search link. Both magazines covered ham radio topics as well as many articles on all aspects of electronics. You should have no trouble finding endless numbers of interesting articles.

Next month we will look at some of Don Lancaster's books on digital electronics.

Update to the photo of the Delta club founders Submitted by David Webb, KV4QI

Johnnie Spotts, W6HTY, saw the photograph of the Delta club's founders in last month's SPARKS and he tells us the gentleman in the lower right, Tom Bell, is W4GQQ, according to the 1961 MARA directory. Thanks, Johnnie, for the feedback.

St. Jude Marathon Results

Submitted by Dan Lasley, NE7JN, contributions by Roger Schlichter, WR4R

The St. Jude Marathon was held on December 5, 2015. Thanks to the 55 hams who contributed their time to supporting the event. Net Operators were Jeff Krause, AJ4GY, and Darrell Sheffield, KK4D. The marathon raised about \$8.2 million in support of St. Jude. Thanks to MARA for the use of their linked VHF/UHF repeaters. A special thanks goes to Roger, WR4R, for being in charge of all ham radio aspects of the event. This is Roger's seventh year as ham radio coordinator. Nice work, Roger!



Figure 5: Art "We Make Art Work" Barnett, WA4PSS, at mile 9 of the St. Jude Marathon. Photo by NE7JN.

Delta Club Information Net Controllers Needed

Submitted by Phil Fentress, AK4UE

We are still in need of a Net Control Operator for our 8:00 p.m. Wednesday sessions, as well as back-up and standby operators. Positions can be assumed for half of the month or for the whole month to help distribute the work load. If you have a desire to serve the local ham community in this vital role, we can work with you to make it happen! Prior experience is great, but there's certainly room to learn as you go through a variety of possible training options. Performing net control duty is very rewarding, improves your on-mic skills, and allows a unique opportunity to get to know a wide cross-section of club members, local, and visiting hams.

Additionally, Net Controllers get together for an information-sharing group luncheon one weekend day each quarter. Absolute fun has been known to break out during these sessions!

For more information on this exciting opportunity, please contact Net Coordinator Phil Fentress via email at p fentress@bellsouth.net.

Operators Needed for Swamp Stompers Event

Submitted by Dan Lasley, NE7JN, contributions by Danny Banks, KJ4FXZ

Danny, KJ4FXZ, is soliciting operators for the annual Swamp Stompers event, a 50 kilometer run through Shelby Forest. The event will be held on Sunday, January 17. If you are interesting in supporting this event, send Danny an email at dbanksd@bellsouth.net or contact him at 901-517-7661.

Danny says the hams supporting the event usually meet at the Shelby Forest General Store for breakfast. Directions to the store: take the north loop around I-240, exit northbound on North Watkins. Drive for about 10.5 miles until Watkins dead ends at Cuba Landing road. Turn left and drive about 1.5 miles to the General Store. The address is 7729 Benjestown Road, Millington, TN 38053, and the phone number is 901-876-5770.

Operators supporting the Swamp Stompers event will be using Delta's 146.82 repeater.

SPARKS Newsletter & Delta Club Information

SPARKS is published monthly by the Delta Amateur Radio Club and emailed to club members. All information published in this newsletter is provided as a service. While every reasonable effort has been made to ensure accuracy, the Delta Amateur Radio Club nor its officers assume any liability resulting from errors or omissions. All correspondence may be mailed to:

Delta Amateur Radio Club * P.O. Box 342768 * Memphis, Tennessee 38184-2768

An alternative email address to offer the Board your suggestions, ask questions, and voice complaints is darc4you@gmail.com.

Please note that you must provide your name and call sign if you're requesting specific actions or personal follow-ups, and also be aware that any profane or mean-spirited comments will be unceremoniously discarded without consideration.

Delta Club Members Can Like Us/Follow Posts On Facebook! Go to https://www.facebook.com/darcmem.

2016 BOARD OF DIRECTORS

President:

Ken Laseter, KI4AOH 901-853-0400 KenLaseter@gmail.com

Treasurer:

Linda Laseter, KJ4CTX 901-268-1766 LindaLaseter@gmail.com

Director of Programs:

Jim Cissell, KI4I 901-326-5544 james4296@aol.com

Repeater Trustee: Bill Stevens, WC9S WC9S@att.net **Vice-President:**

Michael Knight, KK4IOH 901-832-8636 KK4IOH@arrl.net

Director of Training:Joe Lowenthal, WA4OVO

901-628-4318 WA4OVO@yahoo.com

Director of Meetings & Special Events:

Secretary:

901-756-5259

901-827-5049 KL7@carbh<u>eat.net</u>

Barri Munday, WB4SWP

annbarrimunday@att.net

Director of Publications:

Dan Lasley, NE7JN

Steve Frazier, KK4VPT 901-218-6385 sfrazier1@bellsouth.net

Immediate Past President:

Joe Wray, WD4GXI

Board members beginning their service in 2016 are listed in red.



Figure 6: Delta club 2016 Board of Directors: (back row) Joe Lowenthal, WA4OVO, Steve Frazier, KK4VPT, Ken Laseter, KI4AOH, Dan Lasley, NE7JN, Jim Cissell, KI4I, (front row) Barri Munday, WB4SWP, Linda Laseter, KJ4CTX, Michael Knight, KK4IOH. Photo by David Webb, KV4QI.

Future Public Service Events

If you are a coordinator for any of these events, please review the listed information. If it is incorrect or changes need to be made, please email corrections to KL7@carbheat.net.

DATE EVENT	PUBLIC SERVICE EVENT	CONTACT INFORMATION
January 17, 2016	SwampStomper 50k/25k Run thru Meeman Shelby Forest	Danny Banks, kj4fxz dbanksd@bellsouth.net
April 30, 2016	March for Babies March of Dimes fundraising event: walk around Memphis Botanical Gardens	Linda Laseter, kj4ctx lindalaseter@gmail.com

January 2016 Sparks

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Delta Amateur Radio Club

June 4, 2016

Diabetes Tour de Cure
Start on Mud Island and ride thru
Shelby Forest

Pat Lane, w4oqg
w4oqg@bellsouth.net

Sept. 2016

2016 Bike MS: FedEx Rock-N-Roll
Landers Center in Southaven to Gold Strike
Casino in Tunica and back on 2nd day
Multiple Sclerosis fundraising event

Darrell Sheffield, kk4d

darrell.sheffield@memphistn.gov
(901) 277-8122

Tennessee Ham Radio License Plate Submitted by Joe Lowenthal, WA40VO

The link below is for information and instructions about Tennessee ham radio call sign automobile license plates:

http://www.tn.gov/revenue/vehicle/licenseplates/emergency/emergsaftey.shtml

The application is at www.tn.gov/revenue/forms/titlereg/f1312601Fill-in.pdf

Other Notes of Possible Interest

Submitted by David Webb, KV4QI

It's Time to Renew Your 2016 Annual Memberships!

Download the latest .pdf Delta Club Membership Application Form from the web at http://www.deltaclub.org/application-15-3.pdf

Thanks for Your Active Support of Delta Amateur Radio Club!

Memphis Area VHF/UHF Nets

Updated Nov, 2015

Name of Net	Freq. MHz	Tone Local Time		Day of Week	
Delta Club Information Net	146.820	- (107.2)	8:00p	Daily	
Mid-South Barefooted Bullfrog Net	146.535		7:30p	Daily	
Secret Service Net	224.780		8:30p	Mon	
Elmer Net	145.210	- (107.2)	9:00p	Mon	
The Short Winded Net	146.850	- (107.2)	8:30p	Tue	
MedMERS Net	146.820	- (107.2)	12:00p	Wed	
CERTPlus Net	443.200	+ (107.2)	8:30p	Wed	
ARES Training Net	146.880	- (107.2)	9:00p	Thu	
Super Sunday Niner Net	927.6125	- (146.2)	8:30p	Sun	

Delta Club sponsored Nets are shown in red.

TENNESSEE HF NETS

As of December, 2015 All times are Central Time

Net Name	Freq. MHz	Local Time	Day of Week
Tennessee CW Net	3.563	7:00p	Daily
Tennessee Slow CW Net	3.682	7:30p	Tue-Sun
Tennessee Alternate Phone Net	7.238		As needed
CUSEC (Center for United States Earthquake Consortium)	3.810		As needed
CUSEC (Center for United States Earthquake Consortium)	7.180		As needed

3980 kHz – TN Phone Net

Mon-Fri - 5:40 AM, 6:45 AM & 6:30 PM

Saturday - 8:00 AM & 6:30 PM

Sunday - 8:00 AM only Holidays - 8:00 AM only

DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.



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DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.

DELTA AMATEUR RADIO CLUB

P.O. Box 342768 Memphis, TN 38134-2768

DARC Meeting: Second Tuesday of every month at Ellendale Church of Christ 7365 Hwy 70, Bartlett TN



W4BS REPEATER SYSTEM 146.82- 147.36+ (107.2Hz tone) 224.42- 443.20+ (107.2Hz tone) Ben Richhart

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E-mail: ben@cfaparagonplace.com

Please thank our sponsors by using their services and mentioning that you saw their ad in the Delta Club SPARKS Newsletter! Wednesday night Net Control Operator positions for our 8:00 p.m. Delta Club Information Net sessions need to be filled! For additional information, please contact Phil Fentress via email

p_fentress@bellsouth.net

We offer our continued thanks to EMHC ambulance company for generously providing their training room for the many ham radio classes given there.



Image from http://www.hamcalllookup.com/

Delta Amateur Radio Club Sparks Advertising Order Form Date: ______ Name: ______ Call Sign: ______ Phone: _______ Email: ________

TO PLACE AN ORDER

- 1. Mark the box below indicating the ad size you are purchasing and the months you want your ad to appear in Sparks.
- 2. Submit this completed order form and your camera ready ad, via email at KL7@carbheat.net Make check payable to Delta Amateur Radio Club (DARC) at monthly Delta Club meeting, or send US Mail to club mailing address at P.O. Box 432768, Memphis, TN 38134-2768. Camera ready means that ad copy is exactly as you wish it to appear, scaled to fit within the dimensions specified below. Ads may be submitted in .gif or .jpg format, or submitted as a hard copy (we will scan and place your ad for you).
- 3. Your ad order and payment must be received on or before the first Tuesday of the **month before** you want it to appear in Sparks.

SPARKS ADVERTISING											
F	FULL PAGE HALF PAGE		¹ / ₄ PAGE			BUSINESS CARD					
	\$50.00 \$25.00 for 3 Months 7" w X 8 ½" h 7" w X 4" h		\$15.00 for 3 Months 3 ½" w X 4" h		\$10.00 for 3 Months 3 ½ " w X 2" h						
Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2016	2016	2016	2016	2016	2016	2016	2016	2016	2016	2016	2016