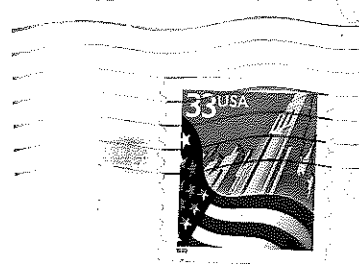


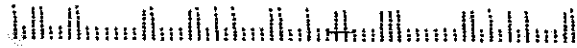
Fox Valley Electric Auto Association
1522 Clinton Place
River Forest, IL 60305-1208



Address Correction Requested

David B Aarvold
915 Oak Street
DeKalb IL 60115 -3470

60115+3470



Next Meeting is on **July 11, 1999** at **12:00 PM** at **1264 Harvest Court, Naperville, IL 60564-8956**
Drive, Bolingbrook (See Location map in this newsletter)

DISCUSSION TOPICS - Cookout No scheduled program but there will be **OPEN TOPICS** time to discuss whatever you wish.

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is \$20 which will entitle the member to receive our monthly Newsletter that contains useful information about electric car components, construction, policies and events. Dues for new members joining in July will be \$3.

To obtain information about the FVEAA, you may contact either President Woods or Vice President Shafer:

President - Ken Woods
1264 Harvest Court
Naperville, IL 60564-8956
(630) 420-1118
E-mail Casa Zeus2@aol.com

Vice President & Editor - Bill Shafer
1522 Clinton Place
River Forest, IL 60305-1208
(708) 771-5202
E-mail electric_bill@compuserve.com

July, 1999 PRESSEZ

Our July meeting will be different. We will have an early start for hot dogs, burgers, potato salad, soft drinks, chips and all the makings. There will be no charge for the food thanks to George Hamstra and the seven members of FVEAA who also are part of Net Gain Technology (Dragster group) for picking up the tab.

Ed asks that you bring along lawn chair in your trunk to use for hangar seating. It would probably also be a good idea to have mosquito repellent. A map of how to get to Ed's place is included in this Newsletter. Road construction on the Stevenson Expressway (Route I-55) eastbound narrows to two lanes for a short distance west of LaGrange Road..

There will be time for open topics, an opportunity to bring up any subject you wish about the FVEAA or our activities.

KEN

MINUTES OF JUNE 16 MEETING

The meeting at the College of DuPage was called to order at 7:32 PM by President Woods. Twelve members and one guest attended. The meeting started with a round of introductions. Ted Lowe of Wheaton, a guest, joined the FVEAA.

The minutes were approved and Treasurer Corel's report was accepted.

George Hamstra gave a report on Dragster activities. The vehicle was not ready for the Joliet run. It was trailered to Colorado the following week for the next racing event. During frantic final preparations the night preceding the race one of two T-Rex controllers blew out while they were attempting to balance output. This required rewiring the system to run the vehicle on one controller and one Kostov motor. Work was completed at 3:30 AM on the day of competition.

The vehicle passed safety inspection and was brought to the line and ran a preliminary 12:21 seconds but the second controller failed. The two failures was traced to a lack of current limits on the T-Rex controllers.

Back home in Joliet the crew substituted a Godzilla controller and expected to run the vehicle at the Joliet track during the National Drag event at the US 66 Strip.

President Woods reported on the Electrician Training Unit in Alsip. This facility replaces the Washburn Trade School in Chicago where union electricians were formerly trained.

The Alsip facility is owned by the Electrical Workers Union. There are 15 persons on the full-time staff. The facility is installing a four kw solar panel on the roof to be used for training. It also has an auditorium, shop space, and lots of parking.

Ken recommended that the FVEAA rent the facility for a FVEAA exhibit and tutorial.

The last event was held at the College of DuPage. Other events have been held in five-year intervals at Triton College, Fermilab, and Argonne. Members selected September 11th as a tentative date for the event and authorized Ken to contact the Union facility for a rental price.

Member Shafer conducted a discussion of using crossed field connections for two series-wound motors to obtain balance in parallel operation. *Bad Amplitude*, the Joliet Dragster, has two Kostov motors coupled in series running through a shifter to a locked differential. The technique does not apply.

Member Shafer presented an update on cost records for his RX-7. His conclusion was the total annual cost for the conversion was less than half that required for a new Ford Escort driven for 4000 miles of short trips (20 miles per day for 200 days per year). He was questioned on the low amount for repairs over six years of use.

He noted there were two omitted items. There could be an annual \$ 150 salvage value for electrical components that could be recycled into another conversion. Second, his calculations did not include the value of life extension for his engine-driven car resulting from substitution of the electric for short trip driving.

Bill said he felt justified in laughing all the way to bank now that his \$ 7000 conversion cost was recovered in just four years.

The meeting was adjourned at 10:45PM

Submitted by Secretary Dave Aarvold

RECENT ARTICLES ABOUT ELECTRIC VEHICLES

Suck Amps. Wired, March 1999, pages 124-129. The article's subtitle is "How a bunch of speed-hungry, rubber-burning, adrenaline-pumped environmentalists get their kicks", pretty much summarizes the content. It starts out describing how the author drove John Wayland's *Blue Meanie* while listening to a Bach Fugue on the car's stereo. The converted Datsun does 0-60 in about nine seconds when he stomps on the accelerator. He notes that John and a group of renegade backyard engineers are determined to present their vehicles as sexy consumer items.

This concept is vastly different from the conventional wisdom. John notes, "Environmentalists don't want you to have fun.. They want you to drive a three-wheeled cockroach that goes 35 mph and if you are hit by a motorcycle - your dead". John converted his 1980 salvaged Datsun in 1980. When he tried to back it out of the garage the available torque twisted the driveshaft, broke a motor-mount bolt and cracked the transmission case

In the 1990's the rest of the world started to catch up with him. In 1996 John entered his "White Zombie" in the 1993 electric vehicle race in Phoenix. In 1996 John bested GM's EV-1 by two seconds. A year later electric drag racing achieved respectability with the formation of the National Electric Drag Racing Association (NEDRA).

Author Charles Pratt describes the 1998 NEDRA races in Woodburn Oregon. This is where White Zombie and Dennis Berube's electric rail humiliated the Dodge Vipers. He also describes driving the dragster around the pit area.

He also notes the last day of the event was dedicated to electric vehicles. He chatted with Bob Boyd, the 78-year old proud owner of a converted Toyota MR2, shiny as the day it came off the showroom floor. Other electric car builders at the event give pretty much the same pitch; "EV's can function every day for limited-distance trips.

John Wayland and Rod Wilde agree that electric race cars have a novelty appeal, but are unlikely to get much airtime on ESPN. There is no visual appeal in their silent operation, no insanely powerful, nitro-fueled monsters that shoot jets of flame out of exhausts. They note that auto manufacturers lag far behind the hobbyists in terms of performance, price, and practicality in spite of manufacturer's spending huge funds for electric vehicle development.

Clean Cars Get Real. NY Times 5/29/99. Author Matthew Wald covering the Tour de Sol event writes the race field was so crowded this year that some entrants were turned away. This reflects the emphasis on a new class of vehicles, the hybrids, as the probable direction auto manufacturers will take for vehicle development. Five hybrid vehicles were entered in this class. NESEA chief, Nancy Hazard, noted the original event eleven years ago emphasized electric vehicles. Hybrids were then perceived as too complex and costly. Now hybrids seem to be the likely means for manufacturers to improve gas mileage and emission reduction. The public has not responded well to commercially-built electric vehicles, perceiving them as range-limited and too costly. Electric vehicles now are back in the hands of the hobbyists where they are used for short-trip driving and found to be cost-effective and

RECENT ARTICLES ABOUT ELECTRIC VEHICLES - Concluded

Tour de Sol results. NESEA news release 6/3/99. Solectria one again topped the electric vehicle class, winning the first three top positions in the Production Class. The winner in the commuter category was a purpose-built vehicle with NiMH batteries. Close behind in this class was the Shadow Mountain High School Class from Phoenix with their *Electric Bull*, a converted Porsche 914. Most of entries in this class were high school projects, including a new entry from Cinnamonsen (NJ) High School with their *Olympian*, a converted Ford Escort, that placed fourth.

The Solar commuter category was won by the University of Maine team with a Chevy S-10 conversion having a 96-mile range. First place in the one-person category was the *NFA Sol Machine II*, a solar-powered vehicle and top car from New York High Schools. The Newburgh High School built the machine in a two-year project. A solar motor scooter from Singapore took second place.

Run -Run Runabout. Chicago Sun-Times, June 28, 1999 (Autotimes Second, front-page) Editor Dan Jedlicka reprinted the Wall Street Journal's article about microcars that was reviewed in an earlier FVEAA Newsletter. The article was accompanied by photos of Corbin's Sparrow, Bombadier's NEV, and a delightful photo of what appears to be a pro wrestler on a *Buzz*, an electrified scooter built by Huffy and available from Sears for \$ 649 or directly from their website www.getabuzz.com for \$ 50 less. Another scooter, ZAPPY is mentioned. Info on this vehicle can be found on website ZAPWORLDCOM

FROM OTHER ELECTRIC VEHICLE NEWSLETTERS

AVEA, The Australian Electric Vehicle Association, this month sent four issues of their excellent publication. The Nov/Dec issue covered Electric Vehicle Symposium EVS-15 held in Brussels Oct 1-3, 1998. The issue also had a description of the *Camira* conversion with a sketch of coupling an electric motor to a flywheel. There was also a five-page article entitled "Using the EV for Environmental Positioning" written by Michael George & Bill Van Amburg of CALSTART. There was also a 3-page article on Lead Acid EV batteries that provides valuable information. Finally, there is a commentary on rejection of the *Panoz Q9 GT Hybrid* for competition in the Formula 1 racing. All the articles are informative. Any FVEAA member interested in reading the issue should get the FVEAA copy from Librarian Ed Meyer.

The Jan/Feb issue covered the CitiPower Sunrace held from Sydney-Melbourne in January. The weather was very hot. Participating vehicles were in classes; six solar, five lightweight one-person, 3-wheel electric vehicles, and three on-road electric car conversions. The issue also contains an article reviewing advanced battery current status written by Don McGrath, conversion of a Mitsubishi Colt by AVEA member Andrew Graham, an article about EVs in Municipal Fleets by William West of Southern California Edison Co. and an article discussing Problems in Planning an EV charging Infrastructure in the City of Turin, Italy written by Paolo Ribaldone.

FROM OTHER ELECTRIC VEHICLE NEWSLETTERS- Continued

The March/April AVEA Newsletter lead article was about the Honda EV Plus. According to a Honda spokesman delivery of the final 300 vehicles completes phase one of their program. The second phase will be customer evaluation of the vehicle. There was also an article by William Korthof who owns both a GM EV1 and Honda EV Plus. He drives the Honda about 2000 miles per month. At 28,000 miles (Half the expected life) Honda replaced the NiMH battery pack to test it for performance and aging.

The remainder of the issue was devoted to a fifteen page paper "Strategic Alliances for the Development of Fuel Cells". Any FVEAA member interested in this topic should get the publication from Librarian Ed Meyer.

The May/June AVEA Newsletter started out with a reprint "Death of Battery EV's Exaggerated" written by Alec Brooks - Vice-President of AC Propulsion and appearing in Automotive News. In it he observes that when total ownership costs are examined over the lease period for an EV1 it is among the lowest for all new cars. He also states there is unbelievable hype about fuel cell vehicles which he discounts. Enormous technical problems remain including; fuel infrastructure, fuel processing, startup time, accessory noise, efficiency, and heat rejection. Success is far from assured. He also notes that Hybrid vehicles have their problems.

He states that many EV1 or EV Plus drivers have found their electric car can be used for 90% of the daily driving. He believes EVs will continue to have a place in the automotive mix. (AC Propulsion's new t-zero is a high performance coupe will lay to rest the perceived image of battery vehicles.)

The issue has two articles about the NAVEI 98 meeting. Author Bill Moore, Chief Editor of EV World, compares inductive and conductive charging systems. He concludes both systems are safe and the issue is one of perception, not reality. He also notes costs for conductive systems are coming down. Author Mark Hansen discusses the differences between induction and dc brushless motors for AC systems. Unique Mobility exhibited a Neodymium-iron-boron magnet brushless motor that is about half the size and weight of induction or brushed dc motors having a comparable rating. He also discusses fuel cells, and fast charging.

EEVC, the Eastern EV Club, in their June issue proudly notes that two entries in the Tour De Sol from New Jersey finished second and fifth. The final standings are reprinted in this FVEAA Newsletter. They also note that a California partnership has rolled out a Class 8 hybrid truck built on a Kenworth T-800B chassis. It has CNG engine driving a generator and battery packs.

EV Circuit, from the Ottawa group, in their May/June issue reported on the Electrathon event held on June fourth. IEEE Engineers conducted the vehicle inspections and Radio Hams provided communications. Eighteen vehicles competed. Seven EVs owned by EVCO members were on display during the event.

FROM OTHER ELECTRIC VEHICLE NEWSLETTERS- Concluded

The issue also has a description of the first Canadian-made aluminum-bodied hybrid, called the *Microvel*. The hybrid engine is unique - a small steam-driven turbogenerator. It is a condensing system, running at 10,000 rpm.

EV NEWS, Larry Dussalt's publication, in the June issue has articles reporting on the Tour de Sol, the NESEA/SAE TOPTec conference, and the annual report of progress by the Partnership for a New Generation of Vehicles (PNGV). The PNGV report states that all-electric vehicles have been all but ruled out as PNGV candidates. EVs cannot meet the targets for vehicle life, cycle life, specific energy and cost.

VEVA, the Newsletter from Vancouver in their June issue reported on their *RIDE ELECTRIC VEHICLE (REV)* event in June. Thirty one EV's were there and eleven entered in the Electrathon. Three pages of the issue featured photos of the various vehicles.

Not noted in last month's FVEAA newsletter due to space limitations was an article in the May issue of VEGA about the t-zero. This is AC Propulsion's performance-oriented 2-seater coupe. The vehicle is now production-ready. It features a stainless steel tubular frame and other improvements. The drive system, limited by battery peak power capability, delivers 200 horsepower to give a 0-60 time of 4.68 seconds. Price - \$ 80,000. Addition info about the t-zero is on the web: www.acpropulsion.com

Current Events, from the National EV group in their April issue reports that at the March 21, 1999 Firebird Raceway in Phoenix the EV's held off the gas-powered racers with 200 horsepower converted Mazda's. A converted Porsche circled the 1.1-mile oval in 73 seconds (66 mph) while drawing just 100 amps..

In the issue *Current Events* Editor, Clare Bell, commented that individual conversions made with modest cost dc machines prevent electric cars from becoming another high-tech toy. Automotive pundits have branded the EV1 a marketing flop and GM doesn't seem to care. She observed that in hearings by the California Air Resources Board, car manufacturers testimony could be summarized as, "we can't, we don't wanna, and we ain't gonna". She concludes, "As long as we build and drive our lower cost dc-brushed cars ... EV's will be in the hands of those who really believe in them... Conversions are built by individuals, in a decentralized environment. They are controlled by individuals and cannot be easily taken away or co-opted."

1999 NESEA American Tour de Sol - Final Standings

Category	Rank	Car #	Total Points	Vehicle Name	Category	Code	Team
	1	72	83.05	Sungo	C	SA	SEV of NHTI
	2	32	80.5	Electric Bull	C	SL	Shadow Min Electric Matadors
	3	61	77.42	Solar Bolt	C	SL	Solar Bolt Team
	4	11	75.93	Solectria SuperForce	C	SA	Team New England
	5	16	73.98	The Olympian	C	SL	Pirates
	6	66	72.98	Recharger	C	UL	University of New Haven
	7	71	67.58	PV EV	C	SL	Palo Verde Electric Racing
	8	50	65	Sparky Spartan	C	SL	Spartan EV Racing Team
	9	17	62.94	Kilowatt Kamel	C	UL	Spartan EV Racing Team
	10	12	59.61	MooRocco	C	SL	Vermont Technical College
	11	6	55.65	Erde	C	UL	Erad
	12	13	52.65	Electrify	C	SA	Enviro motive
	13	37	35.28	UEHS Solar Tiger	C	SL	Solar Tiger Team
	1	7	86.2	Paradyne	H	SL	Paradyne NJ of VTUHS
	2	9	76.67	NJ Venturer	H	SL	Team New Jersey
	3	8	71.85	Electric Lion	H	SL	Penn State SAE HEV Team
	4	18	69.66	Kineticar III	H	UL	CSEPT-NVCTC
	5	23	66.9	Viking 23	H	SA	Team Viking 23
	6	24	63.29	HEV Blazer	H	UL	Cornell University HEV Team
	7	14	51.59	Sipstream	H	SL	Cornell University HEV Team
	1	58	72.64	NFA Sol Machine II	O	OL	Team Newburgh
	2	36	66.49	Futura EVs	O	OA	GFR Technologies
	3	92	62.17	Sunpacer	O	OL	C-M Sunpacer Tech Team
	4	39	26.45	Electric scooter	O	OL	GFR Technologies
	1	15	89.55	Nordic Challenger	P	SA	Evermont/Solectria
	2	76	86.98	Ovonic Solectria Force	P	SA	Ovonic Battery Co
	3	67	86.16	Solectria NiCad Force	P	SA	CT Partnership
	4	10	82.81	Sunergy	P	SL	Ethel Walker
	5	30	81.96	Caballito Electric	P	OL	Person Elec. Trans
	6	35	80.3	CATS	P	SL	NYSDEC
	7	26	77.8	Ford Ranger EV	P	UA	EV Rangers
	8	27	69.13	RAV4 EV	P	UA	Toyota, North Torrance HS
	9	52	67.79	Epic	P	UA	DaimlerChrysler
	10	51	67.42	Epic	P	UA	DaimlerChrysler
	11	41	50.78	Solectria GilVan	P	UL	NYPA
	1	20	78.54	Solar Blast Bear	S	UL	U Maine Solar Vehicle Team
	2	83	75.08	Sol Survivor IV	S	SL	Monadnock Sol Survivor
	3	38	68.53	Artemis	S	SL	BHS FAMS'00
	4	93	61.03	Helios the Heron VI	S	UL	Riverside School

Type:

S = Sedan U = Utility O = One Person

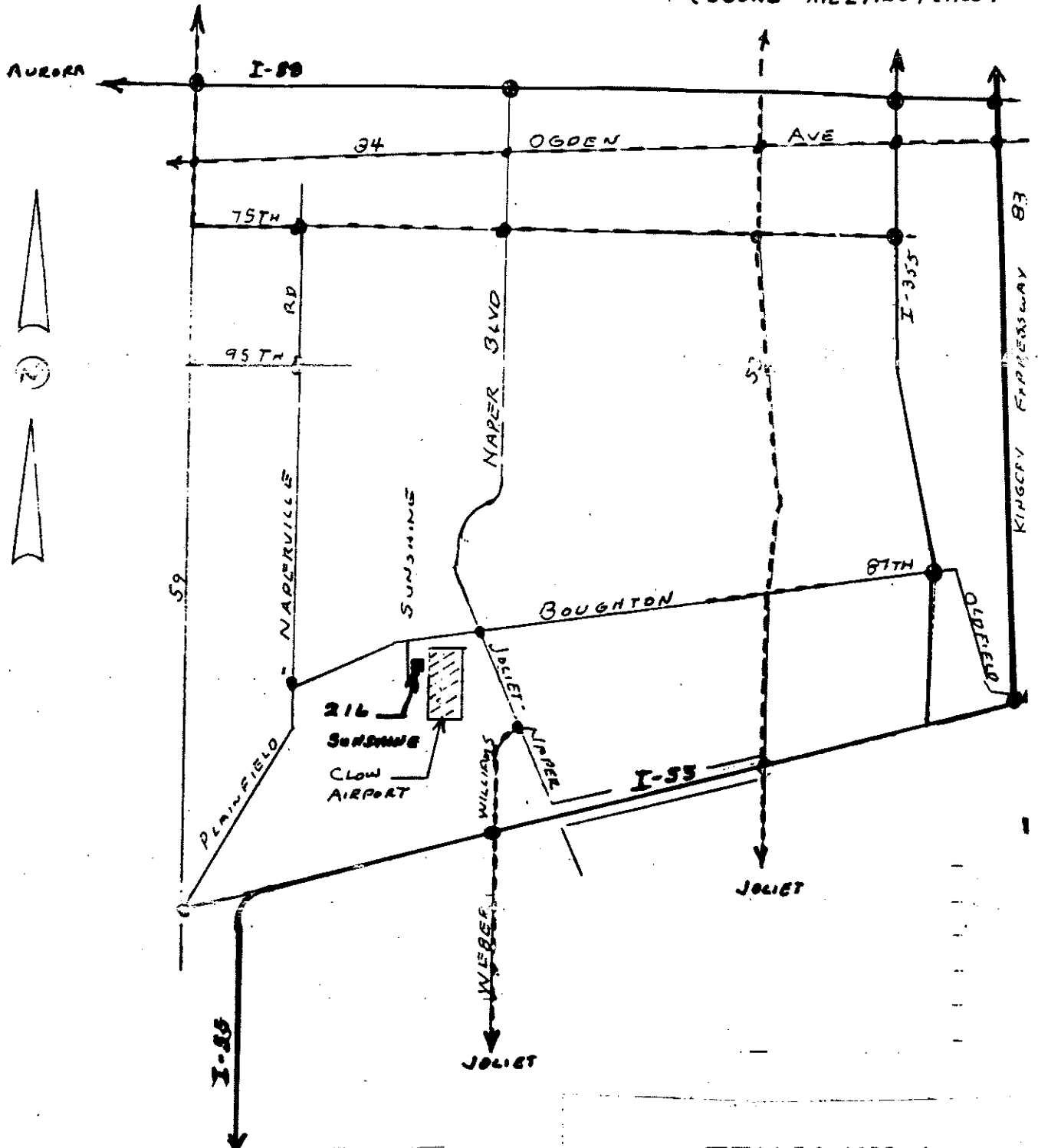
Code:





A - Advanced Battery L - Lead Acid

Category

P - Production S - Solar Commuter H - DOE Hybrid O - One Person C - Commuter

COLLEGE
OF DUPAGE
(USUAL MEETING PLACE)



-  Interstate or Expressway
-  4-Lane
-  Other main Road
-  Interchange or intersection

FVEAA July 16 Meeting
Ed Meyer's Hangar
216 Sunshine Drive
Bolingbrook
(Just West of Clow Airport)

July 7, 1999
W. H. Shafer