



EAA 20th. BIRTHDAY PARTY !!27

THE NEXT ENERGY CRISIS: HOW SOON ?

Many experts predict another energy crisis within the next three to five years. They also predict that this one will be worse than the last two. Here's why:

Demand for oil in the U.S. is up. Domestic consumption of oil rose 2.5% in the first 10 months of 1986.

U.S. oil production is down. The worldwide collapse of oil prices in 1986 caused drastic cutbacks in exploration and production by U.S. companies. The industry lost \$50 billion. December 1986 production was 900,000 barrels per day less than January-February 1986. Not only is less oil produced, but many production facilities have been scrapped entirely--150 refineries closed since 1981. Many small or marginal producers went out of business. Currently, OPEC can afford to keep oil prices at a level which is profitable for them, while it is too low for U.S. companies to compete.

U.S. dependence on foreign oil is up. With demand up and domestic production down, imports are increasing. At the end of 1986, the U.S. was importing close to 40% of its crude oil, an increase of 1 million barrels per day over 1985 levels. Imports from the unstable Persian Gulf area rose more than 300% in 1986. If current trends continue, this will rise to 50% or more within three to five years, and reach 60% by 1995. This increase in U.S. demand alone could absorb the current OPEC surplus within three to five years. For comparison, at the

time of the Arab oil embargo of 1973-74, the U.S. was importing 36% of its oil. When the Iranian revolution cut off supplies in 1978, the U.S. was importing 47.7% of its oil.

U.S. storage ability is down. The cutbacks by domestic oil producers included a 20% reduction in storage facilities.

Distribution facilities are down. Tankers have been mothballed, and tanker production reduced. Current capacity is down 30% to 40%. In addition, inland distribution facilities have declined. The number of service stations has reached the lowest level in 50 years, while the number of automobiles continues to increase. Allocation procedures for sudden supply problems have been dismantled.

In Summary: U.S. demand for oil is increasing at the same time that domestic production capability is decreasing. This is raising our dependence on imported oil from unstable sources to dangerously high levels, as high or higher than existed in the last two energy crises. Also, the ability to respond to a sudden supply problem has been greatly diminished. If the current trends continue, a crisis is virtually inevitable within three to five years.

(All statistics come from the April 1987 issue of Motor Service.)

By Shari Prange

**PUBLIC WORKSHOP
ON
ELECTRIC VEHICLE TECHNOLOGY
MARRIOTT HOTEL
JUNE 13, 1987**

REGISTRATION AND EXHIBITS

8:30 to 9:00

Moderator: Michael Slota

OPENING REMARKS

Dale Stolz
Manager for Retail Marketing

Public Service Company
of New Mexico

9:00 to 9:30

NATIONAL RESEARCH ACTIVITIES

Larry O'Connell
Electric Transportation Program
Manager

Electric Power
Research Institute

9:30 to 10:05

BREAK AND EXHIBITS

10:05 to 10:20

Paul J. Brown
Director of Electric and Hybrid
Vehicle Division

Department of Energy

10:20 to 10:55

Dick Bassett
Electric Vehicle Project Manager

Sandia National
Laboratories

10:55 to 11:30

NO HOST LUNCH/EXHIBITS

11:30 to 12:30

COMMERCIALIZATION EFFORTS

James Brummer
Vice President of Market Development

Electric Vehicle
Development Corporation

12:30 to 1:05

Michael Lechner
Product Development Engineer

Public Service Company
of New Mexico

1:05 to 1:40

CLOSING

Michael Slota
Group Manager, Metro
Customer Services

Public Service Company
of New Mexico

1:40 to 1:55

RIDE & DRIVE AND EXHIBITS

1:55 to 3:00

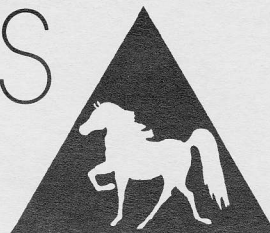
The workshop is free to the public, however space is limited. Please call 848-2331 to reserve your ticket(s) at the door.

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_____	NICKEL CADMIUM BATTERIES	C	3.85	_____
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WHO IS DEVELOPING THE BETA BATTERY?

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BETA BATTERIES LEADING EDGE TECHNOLOGY

The BETA battery is quite unlike any other battery most of us know. In the normal lead acid battery, for example, a liquid electrolyte - dilute sulphuric acid - separates two solid electrodes. Not so with the BETA cell. It uses a solid electrolyte which separates a liquid sodium electrode from a liquid sulphur electrode.

The electrolyte of the BETA cell is made from beta-alumina ceramic. It has remarkable properties. The atomic structure of beta-alumina is such that it acts as a selective ion filter. Sodium ions pass through it to react with sulphur - to form sodium sulphide - when the cell discharges into an electrical load (e.g. the motor of an electric vehicle).

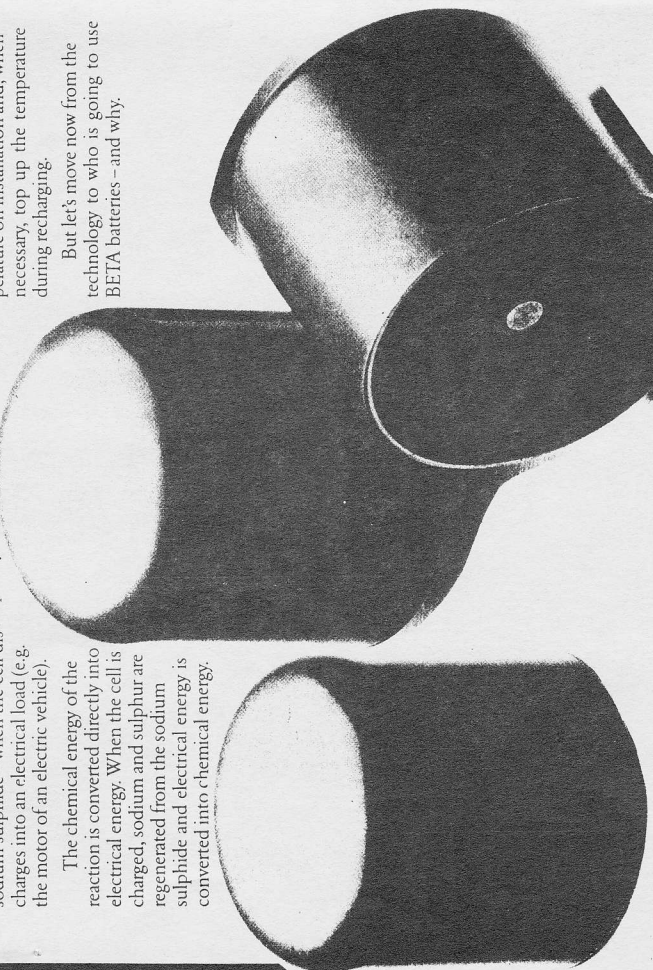
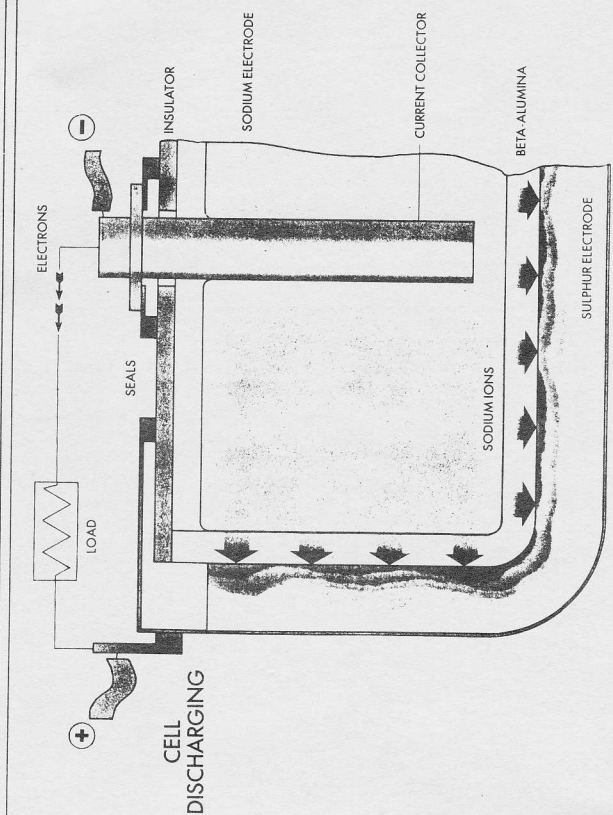
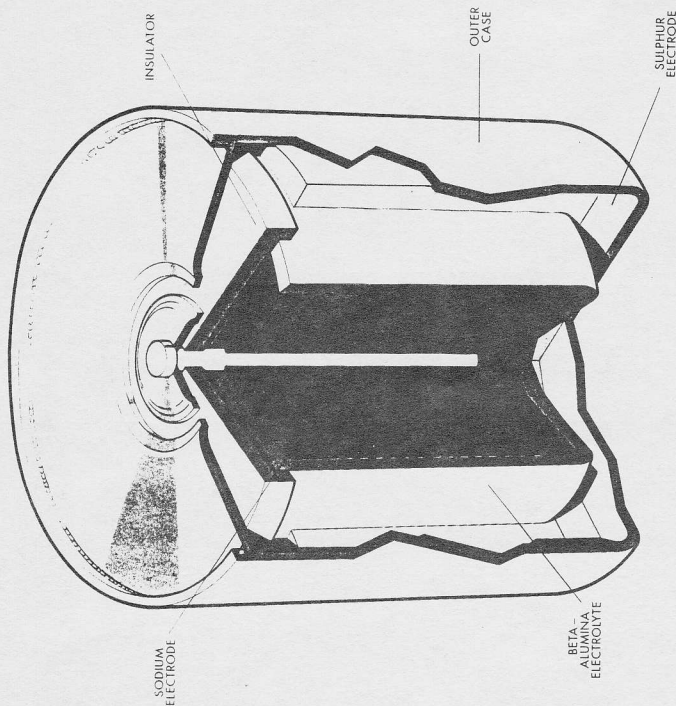
The chemical energy of the reaction is converted directly into electrical energy. When the cell is charged, sodium and sulphur are regenerated from the sodium sulphide and electrical energy is converted into chemical energy.

The sodium, sulphur and beta-alumina ceramic electrolyte are sealed within pressed steel containers to form the individual battery cells. Several specific design features - such as unique seals and an exceptional anti-corrosion coating on the containers - will result in a cell that is reliable, long lasting and completely maintenance-free.

Because the cells operate at a temperature of 350°C, the battery is contained in a thermally-insulated box when fitted to a vehicle. Heat is generated within the cells during charge and discharge and maximum heat generation occurs when peak power is supplied to the vehicle motor during acceleration from a standing start.

This internal heat energy offsets the slow natural cooling of the battery, so that it will remain at the required operating temperature for some days even when not in use. Electric heaters built into the battery box bring the battery to working temperature on installation and, when necessary, top up the temperature during recharging.

But let's move now from the technology to who is going to use BETA batteries - and why.



The BETA cell (shown here actual size) is no larger than a typical torch battery. About 3,000 cells would be packed together in a container to provide a maintenance-free battery for an electric delivery van. The elegantly simple cell design represents a significant breakthrough.

INTERNATIONAL DENVER - Aug 22 23 DEVC '87

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SYMPOSIUM SPEAKERS: John Gould, Pres. Unique Mobility; Clarence Ellers &
George Gless, A Century of History & Technology of Hybrid Electric Drive Systems;
Gates Rubber Vari-Drive (CVT) & Victor Wouk?
WE MUST KNOW HOW MANY ARE COMING!!

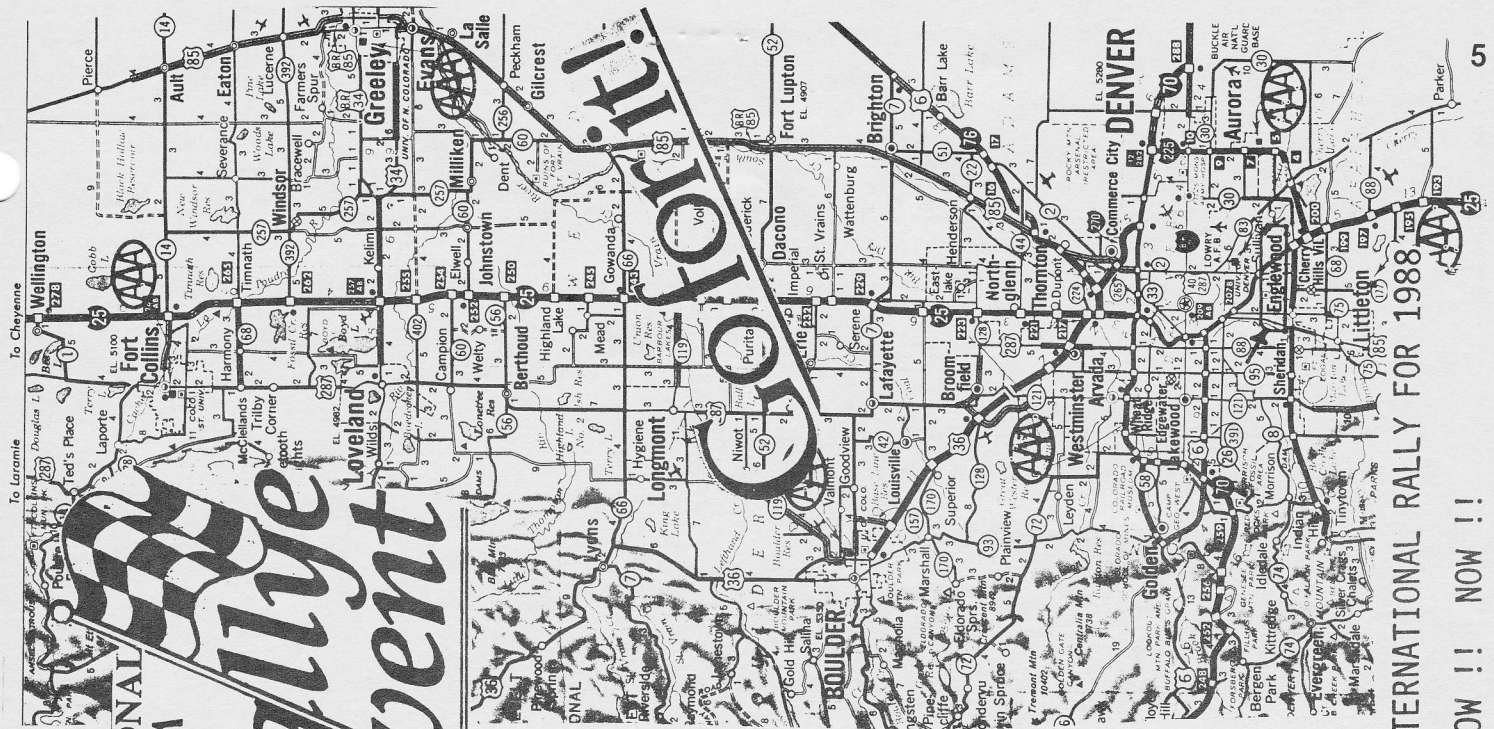
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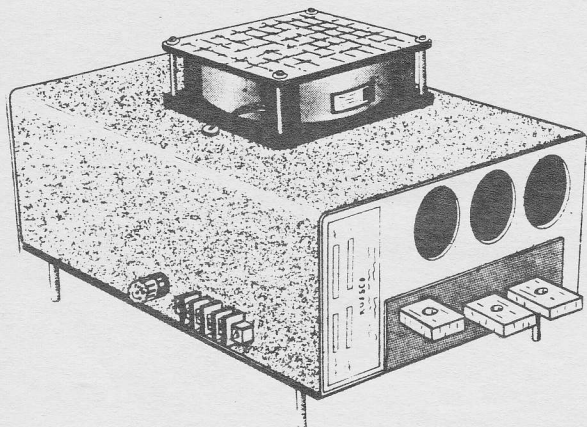
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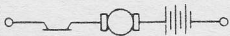
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Bedford's successor in USA

General Motors has decided to continue the Bedford project in the USA. Barclay Robertson, Director of the Truck Service Operation of GM's Truck and Bus Group, has recently stated that GM is now committed to introduce the new van 'as soon as possible.'

What vehicle will be built? not the British Bedford, that is certain. Instead, GM will develop an electric version of an existing Detroit-built van called the G-van. This is similar to the Bedford but has a 125-inch wheelbase and a bigger cargo volume.

A Michigan-based specialist in building prototypes and conversions, Cars and Concepts Inc, has been given a contract to undertake a feasibility study. Lucas Chloride in the UK will be a sub-contractor. The prime aim will be to adapt the Bedford-type package to the G-van and to prove its marketability in the US market.

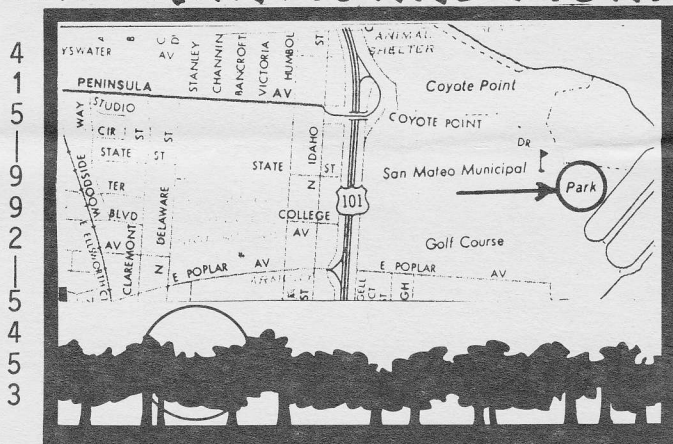
The US electricity utilities are

playing a major role in getting the electric van on the road. Electric Power Research Institute of Palo Alto is helping to fund the van's technical development and testing. Electric Vehicle Development Corporation of Cupertino will undertake market development, and will eventually take over the important role originally conceived for the Bedford, namely to oversee van sales and service operations in the USA.

GM are involved in supplying the gliders i.e. vans without engines. C & C will convert them using LCEVS drive systems and possibly British batteries. EVDC will finance the conversions and involve the GM dealers in customer servicing. Everyone involved appears to be putting the pressure on in anticipation of prototypes being tested in late 1987, followed by production in 1988.

There is no talk yet of GM vans being shipped to Europe.

INTERNATIONAL PICNIC



Developer On "All-Electric" Island Seeks EV Manufacturers Potential Market For As Many As 200 Vehicles Per Year

Just as sure as EVers are looking for markets...there are markets looking for EVers. The following example is an extract from Electric Vehicle Progress Vol.8 #19.

The firm developing an island community located off the coast of the Southeastern United States is seeking electric vehicles — potentially a larger number of them. The firm has already coordinated the purchase of hundreds of EVs, and expects

its demand for vehicles to grow as the result of its major effort to create an island community featuring virtually nothing but battery-powered transportation.

It started when Bald Head Island Management Inc. established an affluent leisure village on the island of the same name, located in the Atlantic Ocean several miles off the coast of North Carolina. In planning the community, the developer decided to encourage residents and others on the island to use electric vehicles exclusively.

The chief reason behind the decision was the desire to foster a clean, quiet atmosphere on Bald Head — a goal to which silent, non-polluting EVs are certainly well-suited. "The island at different times has been owned by several developers and owners, and they have always been oriented toward a clean environment," project Manager W.A. Watkins explained. Since the island is privately owned, the developer has been able to mandate that "all vehicles for general-transportation use be electric-powered." This means that other than for certain internal-combustion engine security and safety-service vehicles, Bald Head is an ideal niche for EVs...a truly all-electric community.

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PROJECT X

We have started a fund with \$1000 to design & build a STATE OF THE ART HYBRID VEHICLE as an EAA project. We will need a minimum of \$10,000 for this project anyone wishing to contribute please send check to EAA PROJECT X, Lee Hemstreet 787 Florales Dr. Palo Alto, CA 94306.

ADS must be received with payment by the 10th of the month, for the following month's issue. AD rate is min. 1 to 5 lines \$5.00, 1/4 Pg. \$15.00, 1/2 Pg. \$25.00, full Pg. \$50.00, full Pg. 2 sides \$100.00. For Sale, Wanted, Trade, etc. Mail to EAA 1249 Lane St. Belmont, CA 94002.



June 1: 37th VEHICULAR TECHNOLOGY CONFERENCE, Tampa, FL (813) 974-2581-ex 272.

June 13: PUBLIC WORKSHOP ON ELECTRIC VEHICLE TECHNOLOGY, Marriott Hotel Albuquerque, NM (505) 848-2331.

June 20: Cancel North Bay Rally.

June 24-25: AIRPORT ELECTRIC, Gatwich, London England.

June 27: EAA 20TH BIRTHDAY PARTY, COYOTE POINT See Pg. 6 & 7

AUGUST 22-23: INTERNATIONAL RALLY & SYMPOSIUM, DENVER, CO. George (303) 442-6566, Clarence (408) 248-2588.

DENVER - Aug INTERNATIONAL

A CHANCE TO PROVE EAA IS REALLY AN
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For information on forming a chapter in your area write Electric Auto Association, 1249 Lane St. Belmont, CA 94002. For a sample copy of the newsletter send SAE #10 envelope.
PHONE (415) 591-6698

EDITORS: - Walter Laski - John Newell - Bill Palmer - Paul Brasch - COMPILED AND PUBLISHED by Clarence Ellers. SEND IN YOUR PERSONAL AND CHAPTER NEWS AND COMING EVENTS. ARTICLES-Comments etc. all correspondence to address below

**Electric
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NEWS

Association

JUNE 1987

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