
D r . B y r o n L . J o h n s o n

Professor Economics -- Emeritus

University of Colorado - Denver

Member 86th Congress

2451 South Dahlia Lane
Denver, CO 80222
January 10, 1989

Mr. Terry Constant, Investigator
Route 1, Box 85 A
Boyd, Texas 76623

My dear Mr. Constant:

Late in April 1976, I was attending an economic development conference at Hitchcock, Texas. The star of the show was an electric automobile being developed by Edmund X. Ramirez, Sr. I was one of 7 people to ride in the prototype he was then using, and we raced down the highway at more than 60 miles per hour, with a State Trooper riding his motorcycle to give us a clear road and assurance that the test would not cause an arrest!

Ever since I had been chairman of the Mayor's Committee on Mass Transit, 10 years earlier, I had been looking for a non-polluting transportation, because Denver has been developing its own "Brown Cloud" and smog. Was this an answer? There was no question about the performance of the car. It was a smooth ride, very quiet. We were intrigued with the many innovative features, such as the anti-drunk computer lock. If you couldn't punch in the right sequence of numbers in 6 seconds, you could not start the car. Regenerative braking goes without saying. Ed has been long interested in safety, and he had an energy absorbing front end. The use of a computer to give the driver an awareness of the charge remaining in the batteries seemed excellent. I made contact in Washington with members of the Department of Transportation staff to verify its potentials, and was given oral assurances by Dr. Clark, for example, and written assurances (see copy of the Matta letter of July 5, 1978, to the Wall Street Journal).

A more guarded letter came to me from James Palmer, who had headed Metropolitan State College, adjacent to our own University of Colorado in Denver (of which I was both a Regent, and Professor of Economics). But this was less persuasive than a phone call from him, warning me that if we put the car through any kind of government funding and testing, everything about it would be in the public domain. Much of the success of EXAR is proprietary information, not protectable by patent.

I began to take an interest in introducing an electric car here, working with Ramirez. But I soon found once again the first law of bureaucratic immobility:--NEVER DO ANYTHING FOR THE FIRST TIME! That law was impressed upon me when I organized South Dahlia Lane as the first management coop to build free-standing houses, but using FHA insurance. (See my book: B. S.--The Bureaucratic Syndrome, written with Robert Ewegen).

In 1979, 1980, and again in 1981, I made trips to Dallas to ride in the newer prototype vehicle with persons who might be interested in its success. The vehicle performs admirably, even on steep inclines. One distressing response from prospective investors was the frequent "If this is a good idea, why aren't the Big Three building such vehicles?" In my seminars on transportation economics, I have shown the class the film produced by one of the Big Three, which is a soft sell that what they are now selling is the best that can be built. But in the past decade, the Japanese have proven them wrong, repeatedly. When EXAR proves the market, I expect them to come in a bit later. In the meantime, if they can sabotage any effort to get such a vehicle into production, that will hold back the day when they have to deliver on their repeated promises to introduce such cars.

For a time, the OPEC push on the price of gasoline looked like a way to speed up getting an electric car produced. But as could have been anticipated, OPEC soon fell apart, and all the king's horses and all the king's men could not put that Humpty Dumpty really together again.

Having helped build the Metro Denver Urban Coalition, I was hopeful that we could launch a Denver production factory/outlet as a minority enterprise. I sat through the courtship negotiations and saw what looked like a marriage contract. But with no significant money on the table, delays in getting the new prototype vehicle back from Italy, at a time when the Denver auto dealerships were going belly-up, the major investor got cold feet, and the deal collapsed.

I brought in another executive with ample background, and a strong interest in minority enterprise, only to watch him proceed as though he had been asked to take over the entire operation. Ramirez had a few similar experiences with other potential investors in other cities. He had to go back to his earlier computer business, to feed his family. One cannot operate forever as a Research and Development Company.

But as the years have gone on, many of the pioneering innovations that Ed had utilized in EXAR have become better understood by the public. The computer security lock, the computer control of the electronics of the car, the interconnections of the batteries, the idea of a warmer for the batteries so they will function well in cold climates, the use of a timer to start the heater in the car, regenerative braking, etc., etc., now seem like old friends. EXAR will have a much easier time of public acceptance now than it might have enjoyed earlier. We each may not be able to build computers, but we all have become familiar with their uses, and welcome the advantages they bring. EXAR is an idea whose time surely has come.

The history of innovations follows a standard track. Rejection is the first response, then timid experimentation, and then, with surprising ease, rapid acceptance. As volume builds, unit prices fall, and widespread purchase is the rule.

While I obviously believe that the car "will sell itself", it is interesting to read the guarded press report of Nov. 23, 1981, by Charles River Associates, Inc., of their findings about market potential demand under a contract with the Department of Energy and the Electric Power Research Institute. They helped chill the analysis by assuming poor acceleration, limited range between recharging, and limited carrying capacity.

Yet they also found, "the most likely buyers were people who have little need for long-distance driving with a second car, and who value low pollution levels." Moreover, "The analysis also indicated that owners of subcompacts would be the most interested in an electric car, and that younger, better-educated drivers will tend to accept the new technology most readily. The most likely market for electric cars is among the relatively wealthy households willing to buy a limited use vehicle as a second car for local driving."

"The CRA study points out that a major advantage of electric cars is that electric fuel will cost only half as much per mile traveled as gasoline....(and)... Most importantly, electric cars will not be affected by gas lines, sudden gasoline price hikes or oil embargoes; and since most of the recharging will take place overnight when demand for electric power is at its lowest, EV's will not be affected by brown-outs or electric power shortages."

It has seemed to me that one could reasonably expect such a new entrant into the auto market to have as its initial target 3% of the more than 10 million new vehicles sold annually, just within the United States. Some of the competition has been thinking in conventional terms of a major company having a big plant, from which it would ship vehicles across the country. Hence the focus has been on commercial vans, for two reasons: 1) Each sale may involve many vehicles, and 2) fleet operators are likely to have their own maintenance and repair facilities.

Others who have dabbled in the electric vehicle market over the 20 years that I have been interested in it have been small operators, garage style operators, who have thought in customized terms, using conversions of existing vehicles plus electric power trains. They have not approached it in a systematic way that solves each of the many design elements as a research and development assignment, related to a national marketing plan. Hence they either have withdrawn from the business, or have found a small market (like golf carts) and continue to be satisfied with that to keep themselves alive. The volume has been small, and the prices have been high--yet the amenities are few.

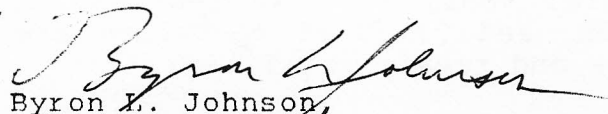
AMECTRAN deserves credit for thinking much more constructively about passenger cars. Given that each factory can be financially viable as an assembly line for only 5,000 cars per year (using only one line & one shift), then that plant can also be the service center for the community and hinterland. Thus any single customer has no reason to fear. If his car requires service, and cannot be driven, it can be towed to the nearby plant, he can be given a loaner to use during the brief period the plant may need to replace the part that has malfunctioned.

As the number of AMECTRAN vehicles in use grows, the prospects for profits from batteries with a better range and life grows exponentially. The consequences will be that EXAR's can be refitted with new electric power supply technology, and they will be able to compete with the internal combustion engine for long-distance driving. At that point, the market for electric cars will leap forward. The company which has a factory in every major metropolitan area will have an enormous advantage over late entries into the market.

The AMECTRAN business plan has the merit that each factory/plant can use every employee as a sales person, offering people rides in the vehicle, and writing orders for them, and earning commissions upon each sale.. My children have driven cabs in Denver, and I am convinced that using EXAR as a taxicab from the airport would result in low-cost but very real wide exposure, and every such cab driver could also be a sales person on a commission basis.

Our cities all are in need of escaping from such total dependence upon the internal combustion engine. While I have long been interested in mass transit, and served as chairman of the Regional Transportation District in 1984, I note that "mass transit" serves typically from 3 to 7 percent of daily trip needs. With an ideal system, I have had hopes that it might serve from 20 to 30% of such needs. In other words, we will continue our dependence upon private automobiles for the bulk of our trip requirements. EXAR will prove to be, I am convinced, the way to open the door to much more widespread use of electric vehicles. Our cities will become more attractive, and healthier.

Most sincerely,



Byron E. Johnson,
Professor of Economics--Emeritus, UC-D
Member, 86th Congress

Attachments include resum'e, BS, sundry letters.

CURRICULUM VITAE for BYRON L. JOHNSON

August 1988

Personal

Born in Chicago Illinois, Oct. 12, 1917
 Married Catherine Teter (Kay), Oct. 22, 1938
 Three Children: Steven Howard, Christine Ruth, Eric Alan
 Resides at 2451 South Dahlia Lane, Denver, CO 80222
 Office: Department of Economics, University of Colorado
 at Denver, 80204. Home phone (303) 756-5864

Education

At the University of Wisconsin--Madison. Economics Major
 1934-38. BA, 1938; 1939-40, MA. 1940; 1940-42, Ph D. '47
 Thesis: The Principle of Equalization Applied to the
 Allocation of Grants-in-Aid.

Teaching Interests

Public Finance: Budgeting and Expenditures, Taxation & Revenue,
 Fiscal and Monetary Policy
 Social Security, Income Security, Consumer Economics
 International Economic Policy, Development, the United Nations
 Urban Affairs: Transportation, Metropolitan Cooperation

Research Interests

The United Nations Organizations: problems and prospects
 Urban Transportation of goods and persons, elevated, automated
 Monetary policies affecting economic development, esp. housing
 New innovative communities, integrating services

OCCUPATIONAL AND PROFESSIONAL EXPERIENCE:

1984--- Professor of Economics--Emeritus, U. of Colorado at Denver
 1983-1984 Elected member, Bd. of Directors, Regional Transportation
 District, Vice Chair, 1983; Chair 1984.
 1970-1982 Elected member: Board of Regents of University of Colorado
 1965-1984 Professor of Economics, University of Colorado at Denver
 1961-1964 Agency for International Development, U.S. Dept of State.
 Worldwide Coordinator for Cooperative Housing, 1964
 Delegate UN Economic Commission for Africa, Housing
 conference, Addis Ababa, 1964
 Joint Military-Economic Inspection of AID to Chile, 1963
 Ass't to Director of International Development Organiza-
 tions Staff (IDOS) 1962-4
 Ass't to Coordinator of Alliance for Progress, 1962
 Delegate to Columbo Plan for Cooperative Development in
 South and Southeast Asia, Melbourne, 1962
 Alternate Delegate to UN Economic and Social Council,
 Geneva, summer 1962
 Delegate UN Industrial Development Committee, NY HQ '62
 Assistant Deputy Director for Program, 1961
 Alt. Delegate to UN ECAFE Conference of Asian Economic
 Planners, New Delhi, 1961
 Led Inspection Team of AID program in Philippines, 1961
 Alt. Delegate to UN ECLA, Santiago, Chile, 1961
 1959-1960 Member of U.S. House of Representatives, from 2d District
 of Colorado. House Banking & Currency Committee.
 1957-1958 Administrative Assistant to Governor of Colorado,
 including as consultant to Governor's Tax Study

1955-1956 State Representative in 40th General Assembly of Colorado
 1953-1958 Organized and led creation of first FHA-insured housing for the elderly, church-sponsored, East Kentucky Circle, and helped secure passage of first Federal legislation to insure loans for such housing
 1951 summer Visiting Prof. Columbia University; and consultant to Tax Study for N.Y. Mayor's Committee on Management Survey
 1948-1951 Organized and led creation of nation's first FHA-insured management-type cooperative housing, South Dahlia Lane
 1947-1958 Consultant to Social Security Administration
 1947-1957 Ass't & Assoc. Prof. of Economics, University of Denver
 1944-1947 Economist, Social Security Administration
 1942-1944 Fiscal Analyst, U.S. Bureau of the Budget, Exec. Off. Pres.
 1940-1942 Statistician, Wisconsin State Board of Health
 1939-1940 Rate Analyst, Public Service Commission of Wisconsin
 1938-1939 In-Service Training Apprentice, Wis. St. Bd. of Health

Major Consulting Assignments

Jan. 1974 Earthquake Reconstruction, AID/Nicaragua, at Managua
 1971-1972 Commission on Railroad Retirement, Wash. D.C.
 1967-1968 Research Review Committee, Welfare Administration, HEW
 1964- US House Banking & Currency Committee (Feb-April)
 1958 Governor's Tax Study, Colorado
 1956 N.Y. State Housing Commission, (housing the elderly)
 1954 Mayor's Tax Study, Denver
 1951 Mayor's Tax Study, New York.

Professional Associations

1978--- Advanced Transit Association (ATRA) Chairman, 1986, 1987
 1970-1987 American Association for the Advancement of Science
 1947-1965 American Association of University Professors
 1942-1986 American Economic Association
 1952-1960 American Political Science Association
 1983-1984 American Public Transport Association (APTA)
 1945-1986 National Tax Association
 1947- Western Social Science Association (& predecessors)
 1965- Society for International Development
 1984-1987 Transportation Research Board

Honors and Awards

1987- Univ. of Colorado Distinguished Service Award; Distinguished Pioneer in Gerontology, Colo. Gerontological Society
 1960- Whitehead Memorial Award, Colo. Ch.-Am. Civil Liberties Un.
 1938- U.W.-Madison: Herfurth (most efficient senior man) Award; Senior Honors, Vilas Medal, "W" in speech, elected to Phi Kappa Phi, Delta Sigma Rho (speech), & Artus (economics)

Community Activities

1968-1975 Metro Denver Urban Coalition, Executive Committee
 1968-1974 Center for Urban Affairs, UC-D, director, then assoc. dir.
 1967-1968 Member US HUD Secretary's Adv. Committee on Mass Transit
 1966-1967 Chairman of Mayor's Committee on Mass Transit
 1966 UCC Member of US Delegation to Conference on Church and Society, World Council of Churches, Geneva, Switzerland
 1951-1975 Various boards and commissions of Colo Council of Churches, National Council of Churches, and United Church of Christ
 1948-1958 Served with Colo Conference on Social Welfare, and with Metropolitan Council for Community Service.