

Name: Ethanol Experiments

Status: Ready

Summary: After characterization on gasoline during 2005, an old VW beetle was converted in October 2006, at no cost, to use E-85 ethanol fuel. An old farm tractor was also converted to E-85. In 2007, tests began on blends from E-15 to E-45 in an unmodified pickup truck. Not long after, multiple pieces of unmodified 4-stroke lawn and garden equipment were operated on E-22, then E-34 blends. Technical data of a very favorable nature were obtained on the truck and the VW. Implementation and public policy recommendations, and other related issues, are included.

Name: Fuel Savings Advice

Status: Ready

Summary: This short presentation offers both technical truth and practical advice for anyone interested in saving fuel, independent of any switch to alternative fuels. The big items are matching vehicle to mission, and carpooling if possible. A smaller item is a national speed limit, but, surprisingly, 65 mph will do as much good as 55 mph. This is because of the tradeoff between road load reductions and efficiency losses as speeds decrease, an effect not considered when the old 55 mph limit was imposed in 1974.

Name: "One Book" Presentation

Status: Ready

Summary: This was prepared as a part of the Waco 'One Book' project, spring 2009, related to the Homer Hickam book "Rocket Boys". The presentation was to explain how and why I became interested in engineering, and what I did during my career, which included rocket and missile work. Many old aircraft, rocket, and other technical-item photographs were found and included, some quite rare. These were things that were simply "part of my life", starting in the 50's.

Name: Asteroid Results from Spain

Status: Ready

Summary: I presented a poster paper at the 1st IAA international conference on planetary defense, held April 27-30, 2009, in Granada, Spain. This conference dealt with detection of, and mitigation of, asteroids and

comets that may impact the earth. Detection efforts are in progress, but incomplete, largely for lack of funding. Concepts for mitigation schemes were discussed, but with as-yet little real development work, again largely due to lack of funding. Civil defense coordination and warning mechanisms for this international problem do not yet exist. Not discussed at the meeting: propulsion to support such schemes does not yet exist, although I identified some promising ideas abandoned long ago. Some slides of pictures taken while touring Granada are included at the end.

Name: **Global Warming**

Status: Ready

Summary: The earth's climate is warming, as evidenced by polar sea ice thinning and glacier retreat on land. Icecaps on land could melt, causing massive sea level rise. Rainfall patterns (and agriculturally-fertile zones) could shift. Independent of "fault", the options are to act, or not to act, in two areas. These are attempted mitigation, and coping with massive change. Concepts for mitigation are currently under public discussion and debate, but concepts for coping are not. The decision to act, or not, should be made on facts and logic, not politics and belief-preferences. Some experimental facts are given, and some recommendations made.

Name: **Peak Oil and Coal**

Status: In work, not yet ready as of this date

Summary: The empirical "Hubbert curve" model for resource depletion is presented and explained. This includes its proper application and its limitations. Hubbert's successful 1956 prediction with this model, of peak US oil production in 1970, is verified by historical US production data. The relative impact of Alaskan oil is included in the data. An opinion is presented regarding planetary "peak oil", and its implications. Coal production in the UK followed a similarly-shaped curve, so the Hubbert curve model can probably be used for planetary "peak coal" predictions. An opinion is presented regarding that scenario, although the dates are less certain for coal.

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