

New transmission design

System promises savings

By SARAH McDONALD
Of the Emerald

Thirty billion gallons of fuel and \$7.5 billion in yearly foreign oil expenditures could potentially be saved if the "Inertial Storage Transmission" invented by Portland Vincent Carman is equipped in all vehicles used in urban driving.

These estimates were compiled by the National Bureau of Standards (NBS) in a report to the Federal Energy Research and Development Administration.

The energy-saving automobile transmission uses a new energy storage method which allows both for the storing energy and for the vehicle engine to be shut down in traffic about 80 per cent of the time.

Carman, a former engineer at Cape Canaveral, got the idea for the transmission while building a sailboat. He had gone into en-

gineering on his own when the space center program ended and planned to build "the best sailboat in the world." While working on the boat he made a new transmission, and when a hose came off and it started pumping oil, the idea came to him to use it on a car.

Carman's invention is basically a hydrostatic transmission of the type now used in earthmovers and cement mixers. It consists of a high pressure oil pump and a high pressure oil motor with motors on the rear wheels. This system eliminates the entire drive train.

The transmission is improved by adding a large pressure tank and pump. When the car is in motion the oil constantly put out by the engine is stored in the tank. In this way the motor can be shut off and the car runs on oil pumped from the tank to the rear wheel motors. The pump slows the car to a stop by pumping the oil back into the tank.

The hydraulic motors on the rear wheels are about eight inches long and "as big around as your calf." These put out 100 horsepower which could allow cars with small main engines to perform better.

Air pollution is cut considerably because the worst polluting times — accelerating and braking — are eliminated since the main engine is shut off at these times. Also, since it uses half the fuel of a regular transmission, there is less fuel burned. As for noise pollution, the engine takes off "like an electric motor."

If Carman's device would have been in use last year it could have saved 30 billion gallons of gas. "This is one out of every four gallons used. More gas would have been saved than what the Alaskan pipeline can pump down here," comments Carman. He feels the economics of his invention are a very important factor.

For this and other reasons Carman predicts that his transmission will be within use in three to five years for urban driving. "The government will insist on postal and mass transit vehicles using it," says Carman. Because of the new fuel requirement laws — 27 miles per gallon set for cars in 1987 — the automotive industry may also be using it soon.

"It will probably be available as an option in about three years," states Carman, adding, "This should make the cars about \$50 cheaper."

Carman has worked on this project for four years. It was perfected a year ago and shown in a demonstration for the three major television networks and the wire services.

In the test, Carman equipped a vehicle with his "Inertial Storage Transmission" in addition to its standard transmission. Comparisons of the two transmissions demonstrated that the new system could double the vehicle's mileage.

Unfortunately, the invention received little press coverage although the testing was done by the NBS which is a prestigious organization.

The NBS evaluation states in part, "We recommend the Transmission System as being technically valid and worthy of consideration for appropriate support." Of several thousand energy related inventions evaluated by NBS, only five, including Carman's, have been as highly recommended.

Library renovation diffuses info centers

Phasing out the general reference desk on the first floor of the University's main library is a big part of a tentative, far-ranging renovation program, according to Donald Smith, assistant University librarian.

"Subject divisions in the library will be strengthened," Smith said, rather than maintaining the complete service at the present general reference area. This simply means that many of the reference books will be distributed to their appropriate subject locations within the library.

This program, however, will not abolish the general reference desk altogether. Instead, a catalog reference section will be instituted in order to relay phone calls and provide direction for students and other library patrons. University librarian William Axford stressed that a desk will be maintained on the first floor as a contact point.

Axford also explained that this new set-up would be an improvement because not only

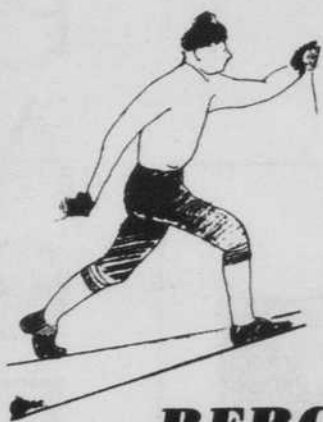
would it produce greater efficiency in the library, but it would cause students to use the library more thoroughly. Rather than relying completely on the general reference desk, students would begin to utilize other specific areas of the library.

Axford said that as students are becoming more academically oriented following a time of relaxation surrounding the Vietnam war, it is the library's responsibility to provide improved services. But the necessary improvements do not always coincide with increased funding. Thus, Axford said that they're doing the most they can with what they've got.

Other aspects of the renovation include knocking out the wall along the back of the first floor to expose the windows. Some staff adjustments are also involved.

Final decisions on these tentative plans will be made in a committee meeting on Tuesday. If accepted, most of the transition will be done between fall and winter terms.

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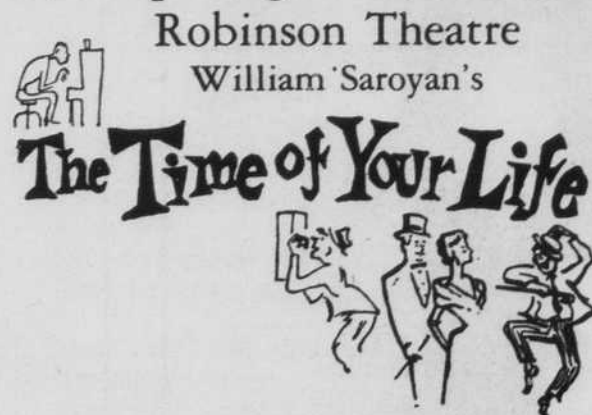
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Fadeley advises students on lobbying approaches

State Sen. Ed Fadeley, chair of the legislative Education Committee and vice-chair of Ways and Means, told a dozen students Monday the key to success in student lobbying lies in "being right, being persistent and having great numbers."

He was responding to a question asked by former ASUO Pres. Jim Bernau as to what methods are most effective in influencing the Legislature. "There is no hard and fast rule," Fadeley said. He said brash, threatening activity often succeeds but then so does persuasion and playing on the competition between Republican and Democratic parties.

But Fadeley questioned the usefulness of immediately running to the Legislature to settle student grievances. "Threaten the administration with taking student problems to the Legislature," he said, "whether you intend to or not. But don't let all the power get to the Legislature."

Fadeley said the Legislature may not always be the sympathetic body students believe. He recalls an incident several years ago when the Emerald was under University auspices. It published a story, which a professor had given

an "A," that dealt with "intercourse under a table in a beer parlor." A local legislator reacted to the story by demanding the professor fail the student. Fadeley said that type of legislative interference makes him nervous.

Fadeley, a University law school graduate, also discussed Oregon's taxation system and the legislative route educational budget requests follow.

He pointed out Oregon's Constitution forbids deficit budgeting, which means the Legislature only has two options when trying to lower University tuition: it can either allocate more tax revenue to the University and risk depriving other areas, or it can alter student/teacher ratio by increasing the number of students. Fadeley said he is 85 per cent convinced the latter alternative would lead to a decline in the quality of education. And because student enrollment is plummeting, higher education administrators are tempted to offer "non-traditional" or the so-called "mickey-mouse" courses to attract students.

Fadeley, who has two years left in office, departed with a cheery, "I ain't running for nothing."

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