The Clean Air Car Project Will Tune Your Car

by James Henry
Caltech's Clean Air Car Project is gearing up for its most ambitious program yet: a $225,000 program aimed at disconnecting the vacuum advance from the ignition earlier in the combustion cycle to prevent overheating.

The project is being undertaken to answer questions raised by recent efforts to gain State Air Resources Board approval for various used car emissions control devices. Such devices, when approved, will be required for the sale of most of the 1971 cars in the State.

The most promising devices so far for reducing emissions is one that would control the operation of the vehicle's spark timing. This approach to reduced emissions was discovered by Bob McJones, an engineering consultant to the gas company, while working on reducing emissions with natural gas powered cars. His modification was simply to disconnect the vacuum advance from the ignition earlier in the combustion cycle when the engine is less susceptible to knocking. This extracts more power from a given amount of fuel and hence improves fuel economy. In so doing it also increases emissions of hydrocarbons and oxides of nitrogen. Reinstated and operating ahead of vacuum advance, however, most cars will produce about 50% less hydrocarbons, 30% less carbon monoxide, and 35% less oxides of nitrogen.

Overtaking Roadblock

The main roadblock at this point is that Detroit claims disconnecting the vacuum advance may promote overheating in some cars. McJones, relying on his experience with about two thousand gas company vehicles, says this is nonsense. The Car Project, which has disconnected the vacuum advance on about ten cars, tends to agree with McJones.

GM is the major force voicing the Detroit view. The Car Project members, noting that GM is trying to market a device which would reconnect the vacuum advance in an overheating engine, feel GM may have its heart in its pocketbook. It is estimated that GM's device would cost $35 to $40 more than the Car Project's procedure would cost about $10.

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In the course of the program it is hoped that over 150 cars will be tested. This will be a tall order since each car will have to be tested for emissions and overheating before and after the advance is disconnected and the car returned. In addition two emissions inspection procedures will be run on each vehicle. Two procedures are proposed for use in statewide inspection programs and are quick tests.

Your Help Needed

Since emission control device requirements will be high, the project is asking for help from community in coming emissions testing and control. The course will feature work with the used cars. Natural Gas

Upcoming Events

Ticket Information

A National Piano Day is set for Sunday, January 9, at 8:30 p.m. in the Beckman Auditorium. Dr. Murray, already acquainted first hand with the subject of Spreading and Continental Drift, will become a reality sooner. If your name or address was wrong in last week's issue, you will receive a list of the other candidates in the California presidential primary have been invited for Olive Walk talks. Senators Muskie, Jackson, McGovern, and former Senator McNamara will be here during the second and third weeks of January, is an expert on drugs, calculus, and politics in Latin America.

Two projects still in the planning stages need the help of students. One involves bringing a State Department diplomat to Caltech to discuss foreign policy. The other is concerned with the ethical problems of the scientist, especially in genetics. If you will help, please contact the Dalbey Lounge Clubroom.

On the lighter side, the Y has many activities planned to make student life more enjoyable. Tickets have been purchased for the January 21 game between the Lakers and the Jets. These will be sold at subsidized prices. The Y now has a Xerox machine which makes excellent copies for five cents each. Sleeping bags, packs, and other camping equipment have been ordered and will be available for a minimal rental fee.

Many people are still unaware that the Y lounge contains a very good stereo system and the rock record library. In addition, there is an exhibit of photographs by Floyd Clark.

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The California Tech
Thursday, January 6, 1972

**Clean Cars...**
Continued from Page One
and propane vehicles would also be involved in some of the work, although no automotive know-how necessary. (no prerequisites, small or large groups)

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Ye Gnew Sports Menu

Friday, January 7
4:00 p.m. Swimming UC San Diego Away
4:00 p.m. Wrestling Biola Home
6:30 p.m. JV Basketball Redlands Home
8:30 p.m. Vars. Basketball Redlands Home

Saturday, January 8
12 noon Fencing U.C. San Diego, Cal State L.A. Caltech at UC Riverside Away
6:30 p.m. JV Basketball Claremont/Harvey Mudd at UC Riverside Away
8:30 p.m. Vars. Basketball Claremont/Harvey Mudd Away

Tuesday, January 11
3:00 p.m. Wrestling Caltech, Pasadena College at UC Riverside Away

Wednesday, January 12
8:00 p.m. Vars. Basketball Cal State Dominguez Hills Home

Friday, January 14
4:00 p.m. Swimming Cal State Los Angeles Away
6:30 p.m. JV Basketball Pomona Away
8:30 p.m. Vars. Basketball Pomona Away

Saturday, January 15
8:00 a.m. Caltech Invitational Wrestling Tournament Home
1:00 p.m. Fencing San Fernando Valley State Home
2:00 p.m. Swimming SCIAC, Van Nuys
6:30 p.m. JV Basketball La Verne Away
8:30 p.m. Vars. Basketball La Verne Away

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YE GNEW SPORTS

by Bob Krickhefer

Page House swam to an easy victory in the Interhouse Swimming Meet, held December 7, 8, and 9, as its men set two interhouse records. The meet started with Beall, Marian House and Hemen swimm ing the 200-yard medley relay in 2:02.4, shaving 0.8 seconds off the old record. In the meet Den Keenan knocked another second off his 50-yard butterfly record, with a time of 0:26.7. En route to scoring 90 points in the meet, Page won both relays as well as four of the seven individual events. Bob Miller won the 50- and 100-yard freestyles, Doug Trottier finished first in the 50-yard breaststroke, and the team of Miller, Hens, Novikoff, and Keenan won the 200-yard freestyle relay.

Fleming finished a strong second, as Ray Waldo led the team with a record-breaking win in the 100-yard individual medley. At 1:06.0, Rick Martin was Fleming’s leading point scorer, with a victory in the 50-yard
Interhouse Swimming—

Continued from Page Three

backstroke, second in the 50-yard freestyle, and third in the 100-yard freestyle. Fleming's second-place finish in the freestyle relay gave them a total of 49 points in the meet.

Lloyd finished third, as Bruce Johnson led his house with second places in the 100-yard individual medley and the 50-yard butterfly. Lloyd's 31 points put them just ahead of Ricketts and Ruddock, who tied for fourth with 28 points apiece.

Jim Loddengaard led the Scorpions in the individual swimming events with a first place in the diving, but the relay team placed sixth in the 400-yard freestyle relay team to place sixth in the meet standings, with 2 points. Ruddock's team was led by Frank Dabney 9.0

the team standings, with 2 points. Ruddock 91.0

Chances for taking league look good if we can beat Biola; but, in the words of a great man, “It shore would be nice if someathemmothers would comean watch!” Friday, at four, here!!

Romantic Gestes: Tech

by Andy Rene

Southern California's small college basketball team player of the week Jerry Owens scored a career-high 44 points in leading Los Angeles Baptist College to an 118 to 53 victory over Caltech Tuesday night. The game was the first in over two weeks for Caltech because of Christmas vacation and left the Beavers lagging 1-3.

Caltech led in the early stages of the game 7-6 on a field goal by forward Gary Prohaska, but eight straight points by the Mustangs of these by forward Gil Blumenschine-gave L.A.B.C. the lead which they never relinquished. The first half saw many turnovers committed by both sides. Unfortunately for the Beavers, L.A.B.C. grabbed the greater harvest from the frequent miscues. The half ended with the Mustangs solidly in the lead, 59-24.

Points Divided

At the end of the first half, scoring was pretty well divided among the Beavers. Six first one guard Jerry Feely led the scoring with five points while Durwin Wright, Mark Bleck, and Gary Prohaska all had four points. At this point, Owens had already scored 28 of his phenomenal 44 points.

The second half of the game saw the partisan crowd cheer the Mustangs to an easy victory as Caltech failed to close the gap. Instead, it widened. In the early minutes the Mustangs outscored the Beavers 20-2 to take a commanding 79-26 lead. The remainder of the game saw both teams substituting freely.

Final statistics showed that five players in the game scored in double figures. Jerry Feely of Caltech had 10 points. For the Mustangs, Jerry Owens had 44, Dennis Lord 21, Gil Blumenschine 15, and Claude Hueners 13.

Sports

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Wrestlers Seek Perfect Season

By H. H. Schnaud

Friday, Tech's magnificent main event men meet Biola in a crucial test of skill, speed, determination, and virility. The undefeated Beavers have won their first seven dual meets.

Caltech 39, LACC 12
Caltech 54, Atascadero Pacific 3
Caltech 51, Lawrence 0
Caltech 46, Trade Tech 9
Caltech 24, SFVCC 21
Caltech 32, ClsCLA 15
Caltech 33, Cal Lutheran 21

Individual performances have been excellent; the six returning lettermen, as well as new team members, have come through in grand style.

(Results not including Trade Tech meet.)

116 Mason 4-2
126 Morris 3-3
126 Lewis 3-3
142 Fratello 5-0
142 Stone 4-1
150 Ziore 5-1
158 Walker 5-1
167 Catarazzetti 3-3
190 Smoody 5-1
198 Johnson 5-1

Vince Fratello, after dropping 20 lb to 142, shocked the world by gaining each of his first five opponents; Willie Moos, a Fresh out for the first time, has turned in a number of impressive performances, wrestling and winning, it seemed, on processes of heart, and guts. Val Catarazzeti, the martyr, weighing 150 and wrestling 167 and 177, looked good in three close losses.

Chances for taking league look good if we can beat Biola; but, in the words of a great man, “It shore would be nice if someathemmothers would comean watch!” Friday, at four, here!!

THE YEAR'S BIGGEST HIT

by RICHARD N. BURTON

From the Los Angeles Times

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From the New York Times

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