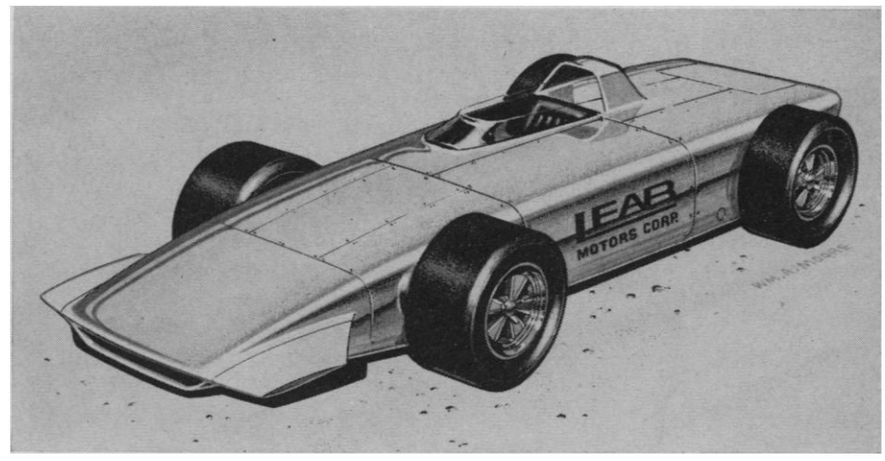
Lear has made a name for himself as an industrial innovator, in addition to accumulating a considerable fortune. He likes to tell people how his fellow industrialists said he was crazy when he began to develop the Learjets, which became a very profitable undertaking. With the steam automobile he is apparently treading on even more perilous ground, but he seems willing to accept the risks. He realizes that he is, as he puts it, "incensing" the auto companies with his plans, but he seems to feel that he will win. "In 20 years," Lear says, "the internal-combustion engine will be an oddity."

Many people feel, however, that Lear's cars will not be competitive with Detroit's cars for a long time to come. "There's still a lot of work that has to be done on steam before it will be able to supplant the internal-combustion engine," John Maga, executive officer of the California Air Resources Board, said in a recent interview. "It will have to be able to do more than simply drive a car down the highway. Until I see a couple of hundred steam cars and see reports from people who were satisfied with them, I'm afraid I will continue to be skeptical."

To turn his plans into reality, Lear has bought the services of some talented engineers, one of whom, Ken Wallis, played a major role in designing the STP gas turbine car that ran so well in the Indianapolis 500 in 1967. In fact, Lear has plans to enter two steam cars in this year's Indianapolis race, with famed driver Parnelli Jones behind the wheel of one of them.

But steam cars still face difficulties, no matter how much money is put into them. The auto companies remain critical, as they were at the Senate hearings. They continue to cite the problems historically associated with steam-driven automobiles. In an effort to find out what steam cars can really do, the California legislature has asked the California Highway Patrol to put steam engines in six of its patrol cars and to evaluate the performance and emission characteristics of the vehicles. The program, as one California official put it, is to "show that the technology exists right now that can solve the air-pollution problem." Some air-pollution authorities are more cautious in their judgments, but all realize that there is a need to find some solution to the air-pollution problem in this country. Federal officials are looking into steam, but, like the auto companies, their efforts are aimed mainly at studying, not




Drawing of steam racer being built for possible entry in the Indianapolis 500.

# An Inspirational Film on Apollo 8

NASA released a 28-minute film entitled "Debrief: Apollo 8" last week, which shows the first manned flight around the moon and gives several excellent photographic views of the moon and the earth from Apollo 8. Like other NASA films, this 16-millimeter color movie may be borrowed without rental charge.*

As well as being a documentary, this film on Apollo 8 is an interesting public relations document, made with keen attention to strengthening NASA's national political base. From suits to nuts, the movie credits the states of the Union that produced various parts of the project (first-stage engines from Louisiana, astronauts' space suits from Delaware . . .). "The genius and the sweat of literally the entire nation ride the mission," the narrator says.

Interspersed throughout the film are comments in praise of the space program by such national luminaries as historian Arthur Schlesinger, Jr., Bob Hope, Henry Ford, and science-fiction writer Isaac Asimov. Harvard astronomer Leo Goldberg talks about the "enormous scientific importance" of Apollo 8. IBM's Board chairman Thomas J. Watson, Jr., expresses his thanks that the United States is now leading the Russians in the space race. The film ends with a close-up of a giant American flag and the word of Lyndon Johnson's favorite philosopher, longshoreman Eric Hoffer, about Apollo 8: "I'm just tickled to death that this thing is being done by squares—you know by average Americans, not by these pretentious intellectuals."

The film-makers also emphasize the importance of religion. In addition to featuring the astronauts' reading from the Book of Genesis, the film is given an inspirational beginning, to the accompaniment of low music and pictures of the heavens, with a statement of Norman Vincent Peale, the popular preacher who performed the recent marriage ceremony for President Nixon's daughter.

At the end of the film, philosopher Hoffer spectulates on the "fancy" that men may have originated in outer space: "Hence our preoccupation with heaven, with the sky, with the stars, with a God who is somewhere out there in outer space. It's a kind of homing impulse . . . we are drawn to where we come from."

Perhaps NASA is on the right track toward building popular and budgetary support for the space effort. After all, how can congressmen bring themselves to vote against programs which bring the nation closer to God?—BRYCE NELSON

* Those wishing to borrow NASA films should write their nearest NASA Research Center or NASA Headquarters, Code FAD, Washington, D.C. 20546 (listing alternative showing dates). A booklet giving details on the other "general interest" NASA movies and a list of "selected professional and technical films" may also be obtained from NASA headquarters.