

patched in cooperation with the International Red Cross, these books on medicine, biology, engineering, technology, agriculture and the humanities are expected to be of practical aid to the men of science among the prisoners, as well as allow many of them to continue studies that were interrupted by the war.

The book service to scientists among prisoners of war in all countries is being undertaken as a part of the extensive book service to war prisoners conducted by the World's Committee of the Y.M.C.A. in cooperation with the International Red Cross, the European Stu-

dent Relief Fund and the International Bureau of Education. Miss Mary Churchill Humphrey of Kentucky helped begin this work when living in Paris at the time of the fall of France and she is now continuing it in this country, as a volunteer with the Y.M.C.A.

Two of the box libraries dispatched to the Far East are intended for Americans, two for British and one for Dutch in Java.

Many of the books were donated by leading libraries and publishers for this purpose.

*Science News Letter, October 31, 1942*

## ENGINEERING

## Bad Smells Remedied

**Pungent odors emitted by bus motors may be reduced if recommendations of engineers are followed. Due to bad combustion when engine is used as brake.**

► **DISCOVERY** of causes and cures for the pungent odors sometimes emitted by bus motors, disagreeable to both passengers and pedestrians, was announced by J. J. Mikita, Harry Levin and H. R. Kichline, three engineers of the Texas Company, Beacon, N. Y., at the meeting of the Society of Automotive Engineers in Tulsa, Okla.

The odors are due to imperfect combustion resulting in the formation of formaldehyde—the disinfectant responsible for “hospital smell”—and other aldehydes. These in sufficient concentration are intensely irritating to the eyes, nose and bronchial tubes. After using their noses for a while in testing exhaust gases, the experimenters found that the amount of aldehydes present in the gas, as determined by chemical analysis, was an even more accurate test of smell and would spare their noses.

The odors can be produced by too lean a mixture of fuel and air, but the investigators found that buses in general use a mixture rich enough to avoid trouble from this cause.

Nevertheless, odors are emitted when the bus is slowing down and the engine is being used as a brake. In this case, the products of combustion left in the cylinders from previous explosions greatly dilute the small incoming charge admitted by the nearly closed throttle. Poor combustion and odors result. They found also that if the idling mixture is too rich, does not bring in enough fresh air at each charge, the odors are

increased. This cause is sometimes aggravated by liquid fuel that becomes trapped in the manifold during ordinary running. This fuel re-evaporates when the throttle is shut down and enriches the idling mixture.

No simple adjustment of the engine nor a change of fuel will completely eliminate exhaust odors when the engine is decelerating, the experimenters found. In a bad case, a gasoline of higher volatility will help some but will lower the economy. A better remedy is to clean the manifold of all deposits that may trap liquid fuel. Another remedy is to raise the temperature of the manifold and of the fuel at intake. Finally the experimenters suggested the provision of a mechanical device which would cut off the fuel or the ignition when the bus is slowing down under compression.

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## PUBLIC HEALTH

## Things That Tend to Make Hearing Aids Expensive

► **MANY** a hard of hearing person goes without a hearing aid because he feels he cannot afford one.

The things that make a hearing aid expensive are given by Miss Josephine B. Timberlake, of the Volta Bureau, in a report on hearing aid clinics published in *Hearing News*, official organ of the American Society for the Hard of Hearing. Here they are:

The salesman's task of helping the

client find an instrument that meets his needs; the often difficult job of persuading the hard of hearing person that he should buy and wear an instrument; teaching him to use and care for it.

“Hearing aids will cost less just as soon as the customer is ready to buy an instrument instead of having to be sold one,” dealer after dealer has told Miss Timberlake.

Obviously, the hard of hearing can help themselves and each other with this problem.

Help could also be given by hearing aid clinics if they followed the pattern of those established in English hospitals as long ago as 1938. At these the hard of hearing not only got ear examinations, necessary treatment and audiometer tests but consultation with the head of the clinic who recommended a suitable instrument, a trial of the instrument at the clinic and for at least one week at home, and the opportunity to buy the instrument through the clinic at a discount which about halved its price on the public market.

The reason hearing aid manufacturers can give such big discounts to hospitals and clinics is partly because they are spared the appalling amount of time needed to sell instruments to individual patients (the clinic does it for them) and partly because the makers can get suggestions from the clinic as to ways in which their instruments can be improved.

Apparently there are only 12 hearing aid clinics in the United States, and only three of them in hospitals.

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