

PLANE PROPELLER'S ROAR PROBLEM FOR ENGINEERS

(Boston Traveller)
Washington, D.C., Jan. 19.—Aero-nautical engineers have solved the major problems of airplane operation, but there is one problem—and a serious one—which has defied them. It is the problem of the suppression of noise. It is not a problem of operation in the locomotion sense, and but a few years ago would have been regarded as a negligible one. When the earlier flights were being made no one com-plained of the roar. It seemed indeed, like a roar of triumph at the conquest of the air.

Noise is Tremendous
Today matters have altered. Air-plane transport companies are aware of the fact that many persons are not potential passengers for their lines so long as the noise of the machines is so loud. Railway companies here spent millions in the aggregate, to si-lence the noise of operation of their trains, in order to attract patrons to whom incessant noise is obnoxious. The time has come when the airplane com-panies must do the same. Conversa-tions on the planes are practically out of the question. Even in the tightly closed cabins the noise is tremendous. It is possible to communicate by shouts but this is too wearing an oc-cupation to attract conversationally-inclined travellers.

There is an additional objection to airplane noise. The protest comes from people on the ground. Perhaps the most spectacular case, and the one which resulted in new rules of flying, was that which occurred at the time of the dedication of the Lincoln Mem-orial at Washington. With the Presi-dent of the United States addressing an audience of distinguished person-ages including the son of President Lincoln himself, an aviator swooped and circled over the throng for several minutes, the noise of his plane com-pletely interrupting proceedings. There was an official inquiry into the affair, and new flying rules prohibited any flier from flying over a crowd of such a character—that is, where noise would interfere with proceedings.

People on Ground Complain
The matter has gone even beyond that. There are now established many regular air lines; along chartered air-ways. There is a great deal of night

flying, especially in carriage of mails. It is found that residents of cities over which planes fly are complaining against being awakened and other-wise being disturbed by the droning of the planes. Attempts have been made to get schedules or routes changed to escape the noise nuisance. Airline companies realize that this matter may become serious. The courts recognize noise as a definite nuisance and recognize the rights of citizens to insist upon abatement. Yet planes must pass over cities to reach their destinations and, for that mat-ter, the right of even a rural dweller to insist that a plane steer away from his dwelling with its furious noise can-not be gainsaid.

So it is a matter for the engineers to stop the noise at the source and so far, they have been unsuccessful. Air-minded people are inclined to take the position that civilization cannot be stopped because of a little noise, but a large mass of people are answer-ing in effect: "All right, don't stop civilization, but that noise has got to stop!"

To start with, a highly interesting scale has been established by engi-neers of the bureau of standards. It does not include wartime bombard-ments, but of all the noises generally heard the scale shows the roar of an airplane to be the loudest. The scale has been created on the basis of units of physical intensity. It begins at what is called the threshold of audi-bility or the lowest sound which can be heard by the average normal hu-man ear. That threshold takes a unit of 1.

The bureau of standards displays an unexpected tendency toward lyricism. As the next stage in its scale it places the rustle of leaves in a gentle breeze. This volume of physical intensity it gives 10 units. Next comes the whis-per, presumably of the type used by political campaigns and courting. This gets 100 units in the physical intensity scale.

Now against this scale is placed a second scale of decibels. The deci-bel is the scientific unit of sound. At the rustle of leaves on the scale the physical intensity and the decibel score are even. Both stand at 10. But when the whisper stage is reached the physical intensity scale reaches 144, it

is found that the decibel scale—a much coarser one—registers only 20.

Rapid Increase in Intensity
The next stage is soft radio music in an apartment. The definition of "soft" is not elaborated, but, at any rate, this volume registers 30 decibels, but 100 units of physical intensity. The next is the range of conversational speech. This ranges in decibels from 40 to 60, depending obviously, on who is talking, but, in physical intensity, the intensity is from 10,000 to 1,000,000 units.

The noise riding in a train registers about 65 decibels and some 5,000,000 physical intensity units. The noise in a stenographic room shows 70 decibels and 10,000,000 physical intensity units. The noise in New York subways reach-es 80 decibels and 100,000,000 units of physical intensity. But the noise of an airplane caps all with from 90 to 100 decibels and no less than 10,000,000,000 units of physical intensity. In other words, you can hear it. This is 10,000,000,000 units above the thresh-old of audibility.

After working all this out and ex-perimenting with all angles of the problem, the aircraft engineers find that there is nothing to do about it until some inspired inventor discovers how to control the propeller noise. The propeller, not the engine noise can be reduced considerably, but so long as the propeller noise keeps on any-way, the lessening of engine noise makes no apparent difference to the hearer.

Tip Sped of Propellers
It is what is called the tip speed of propellers which creates the tremen-dous roar. This means the rate at which the tips of the propeller blades are revolving. Experiments on this line, the engineers have found that a reduction of 10 to 15 decibels in noise can be attained by increasing the diameter of the propeller. But such a change would increase engine noise to a compensating degree. Also, muf-flers would add to the weight of the engine—something to be avoided in airplane design.

The engineers will not stop work-ing on the problem and the time may come, so determined is science, that airplanes will purr along with scarcely more noise than bats and butterflies. But not right now.

MISS MACPHAIL ROBBED OF HER POCKETBOOK

Agnes MacPhail, M. P., Canada's lone woman member in the House of Commons, recently made a trip to Texas. There she was robbed. In a letter to the Hanover (Ont.) Post she describes how she made the home run to Ontario, very short of cash:

"My three days in Dallas were a constant delight, in spite of a pick-pocket gathering my fifty dollars. Of-ten I have wondered how awful must be the sensation of not being sure one had enough money to pay for food and shelter, so after the fifty dollars left I thought I would experiment and find out a little about it. With two cheques of considerable size drawn on a Texas bank in my pocketbook I started back with what was left in cash. Sleeping accommodation, meals, porters, and taxis had to be paid for, or done without. The first day a play-wright from Dallas, who I had met, asked me to tea and dinner, that help-ed. I handled my own luggage. The next day I ate one meal, breakfast, for 20 cents, griddle cakes, syrup and coffee, walked instead of taking a taxi, shoved breakfast on until mid-forenoon and found a lot of down and outs were doing the same thing; slept in an upper berth was working too hard to go without) read papers other people had finished with. I spent my last one dollar bill to send a wire from St. Louis to Byron Young, of Bridgen, asking him to meet me in Windsor, in order to get me to an afternoon meeting there on time. It had to be a straight wire and over ten words; never did I choose words so carefully. Finally I arrived in De-troit and took a taxi to the tunnel bus, which brought me onto Canadian soil with 45 cents, which I had care-fully kept for a real breakfast and I gave the 45 cents to the crippled chil-dren's fund. But that was all, just playing. What must it be for those who grimly face want and hopelessness day after day.

THE LONDON MODERNIZING CHEMIST SHOP, ALSO THE PUBS A NEW MARRIAGE CUSTOM

A cause of much astonishment to observant American tourists who re-visited Great Britain this summer after an absence of several years was the evidence of the Americanization of some drug stores and chemists' shops, as they generally are described here. But this break with old traditions is in large measure still confined to com-bine or chain drug stores. There are many of Britain's 23,000 chemists, particularly those carrying on a family business established centuries ago, and who still style themselves "chymists" whose only concession to modern American tendencies is the addition of a line of medicated sweets or can-dies to their stocks. The idea of a soda-water fountain as a drug-store adjunct is for the more conservative of the "chymists" too outrageous even to entertain. And, it must be added, few of the most modern ones sell ice cream or are equipped with fountains, and in none is it possible to obtain the quick lunch ready to hand in big American emporiums of the sort. Nevertheless, the wide variety of goods on sale in certain combine places in seaside resorts in this coun-try might occasion surprise, even to the urban American, for besides sta-tionery, books and candy they stock hardware, gardening implements and hats for beach use. It will become in-creasingly difficult for some 'chymists' to retain the old character of their es-tablishments and compete success-fully with drug stores which are rapidly becoming general stores.

Judging from the clamor for the re-tention of or revision to the style of inn or pub sign which gladdened the hearts of the robust drinkers in merr-y England's raciest days and which are now to be seen more frequently on Christmas cards than on the real places of refreshment, there are more Britons exercised over the moderniza-tion of inns and pubs than over the changed appearance of the drug stores. Greater use of the roads has led to the discovery by motorists that the rural inns like the pubs of urban districts, have in countless instances lost much of the character that was theirs before they became trustified or links in a brewery's chain of host-leries. And the agitation seems to be impressing the more alert brewers, for they are now employing competent artists to produce signs as attractive as those of several centuries ago to supplant mean-lettered ones that de-note mass production and absence of taste. This commotion for the restor-ation of the sign with the meaning also conveys the impression that in many of the King's subjects are as much concerned with the outward ap-pect of a hostelry as the greater num-ber may be concerned over what is to be obtained inside. There are signs in use which were painted by the Royal Academicians, and many more of considerable merit by lesser artists. It is the argument of those who would adhere to the old tradition that a good sign denotes a good inn, that for a modest outlay the brewers could ob-tain highly creditable artistic sub-stitutes for the present tin or enamel atrocities that assail the eye of the wayfarer. At the same time hard-pressed artists would be able to sup-plement their meager incomes and the beauties of stress in the picturesque communities would be enhanced. The names of most pubs and inns, it is added, lend themselves to pictorial art. Plain commercial lettering, it is contended, cannot do justice to such names as the White Hart, Black Bull, Spotted Dog, Blue Ram, Wheatsheaf, Seven Stars, Elephant and Castle, the Three Jolly Sailors or the Pig and Whistle.

There is much sympathy here for the lovers who are in revolt against the law's requirement that marriages must take place in daylight, or by 3 p.m., at the latest. But there is little likelihood that the agitation will be any more successful than in the past. The daylight restriction has its origin in medieval canon law, when it was thought that "those who intend hon-orably, need not fly the light," and when the belief was held that lovers "are most serious in the morning." Up to 1886 no marriages could be

on the 13 th of the month. It is also becoming the custom in some quar-ters to have the wedding cakes of un-usual design. It is "the thing" to have a cake designed in the shape of a football when a footballer is married, or a fireman's helmet when the groom is a firefighter, or a yacht when the bride or her spouse is interested in yachting. The archway of drawn swords when the bridegroom is in the army finds emulation in such grotes-que forms as archways of cricket bats, hockey sticks, tennis racquets, fire-men's axes and Boy Scout staves, where honor is sought to be done to the profession of either party, his or her club affiliations or prowess in games.

Cincinnati credit men have request-ed the university to discontinue a course of lectures on economic condi-tions, because it is too gloomy. Prob-ably on the ground that if we could have a whole new generation growing up which had never heard of depres-sion there would be no temptation to an unlucky color, or about marriage

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