AN ALMOST PRACTICAL SOLUTION TO AIRLINE OVERBOOKING

By Julian L. Simon

Perhaps the reader has suffered a fit of impotent rage at being told that he could not board an aeroplane for which he held a valid ticket. The explanation is clear, and no angry letter to the president of the airline will rectify the mistake, for mistake it was not. The airline gambles on a certain number of cancellations, and therefore sometimes sells more tickets than there are seats. Naturally there are sometimes more seat claimants than seats.

The solution is simple. All that need happen when there is overbooking is that an airline agent distributes among the ticket-holders an envelope and a bid form, instructing each person to write down the lowest sum of money he is willing to accept in return for waiting for the next flight. The lowest bidder is paid in cash and given a ticket for the next flight. All other passengers board the plane and complete the flight to their destination.

All parties benefit, and no party loses. All passengers either complete their flight or are recompensed by a sum which they value more than the immediate completion of the flight. And the airlines could also gain, because they would be able to overbook to a higher degree than at present, and hence fly their planes closer to seat capacity.

The level of optimum overbooking would be an easy computation, the parameters of which are only the probability of more claimants than seats at any given booking level, and the average low bid price. As a crude way of finding the optimum, an airline could first implement the bid system at present booking levels, and then increase the booking level in steps until the maximum net revenue point was reached. It is possible that the maximum might not be reached before all flights were filled to capacity.

One might wonder whether the lowest bid might not sometimes be so high as to make the scheme unprofitable for the airline. It seems unlikely that among a planeful of independent individuals there would not be one or two or three whose price would not be a tenth or a half or even the ticket price itself, and the airline would surely be ahead of the game even if the price were many times that high. An astronomical price would probably be the sign of a cartel, which would only be likely if an organisation (such as a corporation) had bought all the seats on a flight and was in a position to enforce sanctions on a price cutter. It should be easy to prevent such exceptional situations by putting a high but not astronomical maximum on the winning bid price. And of course there is no danger from professional lottery players because the cost of a ticket (for the plane and to the lottery) would make it a very poor bet.

If the innovating airline were particularly cautious it could begin the scheme with tourist-class passengers, whose bid price should be lower than that of first-class passengers.

This problem has the rare property that the solution is clearly closer to a Pareto

optimum than is the present condition. All one is doing is to allow exchange (of time utilities) by auction, where no exchange is now possible. There are no trade-offs of utility between one group and another because no one is a loser, unless one takes into account the diffused effects on employment and national income, and even then there are losers only under very particular assumptions. Contrast this case with the fascinating discussion of textbook pricing by Horvitz.* He makes an excellent case for his proposed solution, but he has to argue that the loss to some book buyers will be relatively small compared with the gains to others. In other words, he has to assert something about interpersonal comparisons and social aggregates before he can conclude that his solution will come closer to a Pareto optimum. The same is true of marginal pricing schemes for public utilities: *someone* must pay a higher price or bear a larger part of the cost, even though the community as a whole can be said to benefit. But in this scheme *no one* is put out, even a little.

Another feature of this scheme is that it does not require concerted action to get it started. In this it differs from Horvitz's textbook price scheme, in which the competition at existing prices from other publishers would make it difficult for the innovator to get the scheme started by setting a higher original price. In the airline situation, the first firm to undertake such a scheme could expect to improve its position *vis a vis* its competitors, both because of its more economical operation and because the bid system *must* be popular with customers. (The customer under this system is guaranteed that he will not be bumped, and he has a chance of a windfall.) Therefore, in a competitive situation with many competitors one could expect first one and then the rest of the competitors to adopt the scheme.

Also, the scheme (unlike a price cut) would make *all* competitors better off if all adopted it, so such consensus considerations would not prevent its adoption.

But of course this scheme will not be taken up by the airlines. Why? Their first response will probably be "The administrative difficulties would be too great". The reader may judge this for himself. Next they will suggest that the scheme will not increase net revenue. But the *a priori* arguments to the contrary make the scheme worth a trial, and the trial would cost practically nothing and would require no commitment.

What are the real reasons why this scheme will not be adopted? Probably that "It just isn't done", because such an auction does not seem decorous; it smacks of the pushcart rather than the one price store; it is "embarrassing" and "crass", *i.e.*, frankly commercial, like "being in trade" in Victorian England.

Failure to adopt a scheme such as this, which would give a competitive advantage to the first adopter and then benefit all competitors, will give a further indication of the type of "competitive" atmosphere in which large companies such as the airlines live.

University of Illinois

*Paul M. Horvitz: "A Note on Textbook Pricing", *The American Economic Review*, September 1965, pages 844-848. (Horvitz argues that, instead of pricing a textbook at say $8.00 for all its life, one should price it at, say, $10.00 in the first year, $8.00 in the second year, $7.00 in the third and $6.00 thereafter. He studied the effects of this on the secondhand market, the sale of new books and the frequency of editions.)