

## NOTES AND MEMORANDA

### "TRANSHIPMENT MODEL AND TRANSPORT PLANNING"—A *Comment*

RONALD E. MILLER

IN the December, 1966, issue of *Artha Vijnana*, Ashok Parikh presented a paper dealing with "Transshipment Model and Transport Planning" [5]. The present note comments briefly on the model presented in that article and the use to which it was put.

By way of introduction, it seems appropriate to point out that the use of comparisons between actual values and optimal solution values in a linear programming model as an indication of the efficiency of the system being modelled is a fairly well-established idea. This was Henderson's approach [1] in his study of the efficiency of the coal industry; more recently it was used by the present writer in studying a segment of the United States trunk airline system (Miller [3]). In that study, optimal and actual numbers of aircraft of various kinds on given arcs in a particular network were of interest. Various measures of individual route as well as system-wide deviation were presented. Instead of aircraft, Parikh is concerned with deviations between actual and optimal tons of commodity moved over individual arcs, and, of course, his linear programme is of a different form.

The title of the article includes "transport planning", and there is, in the first paragraph, reference to the model's usefulness in preparing a "systematic transport plan" (although this is never defined). Yet the results of the study show, in general, extremely wide divergence between actual and optimal commodity flows (pp. 454 ff). That is, the linear programme solution did not "predict" the actual flows at all well for the five commodities studied. This is hardly surprising, since Parikh has given us no evidence about the structure of these industries or the regulation (if any) to which they might be subject to indicate why we should expect anything like optimal behaviour from them. In addition, there are brief remarks on the impossibility of having some of the necessary data for future years (p. 458-459). Thus the model predicts already observed phenomena poorly and requires, for prediction into the future, unavailable data.