

Correspondents from Developing Countries Discuss Low-Volume Road Concerns and Needs

Session 6 of the Second International Conference on Low-Volume Roads was a function of the TRB project on Transportation Technology Support for Developing Countries. Kermit L. Bergstrahl, chairman of the project steering committee, was presiding officer for this conference session, in which six project correspondents served as panelists. Each speaker had been invited to discuss information and research needs on one or more aspects of the planning, design, construction, maintenance, and administration of low-volume roads in developing countries.

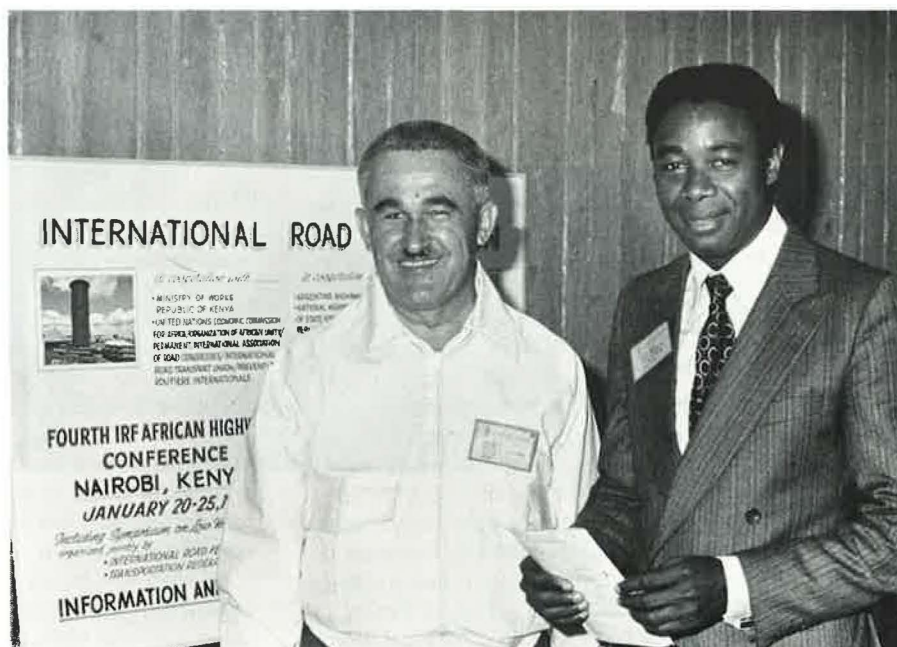
The first panelist was L. R. Soares, who has had an active career in the Brazil Highway Institute and the Brazil section of the Institute for Transportation Engineers. He singled out needs for information on compaction methods, low-cost bridges, criteria for surface types,

and installation of drainage structures. He reported that compendiums published by the project cover many of these needs but that more compendiums are needed, especially within the state highway departments. He reported that the greatest interest in the TRB project is in 10 of the smaller and less developed of Brazil's 22 states.

Said Beano, Minister of Public Works in Jordan, discussed information needs on six topics: (a) evolution from labor-intensive to mechanized maintenance operations, (b) factors in the performance of hot-mix asphalt overlays, (c) effects of dry compaction (which must be used when water is not economically available), (d) surface treatments for dust control, (e) recycling of pavement materials, and (f) utilization of computers in road planning and design.

The third panelist was Ruslan Diwiryo, director of

Correspondents Said Beano (Ministry of Public Works, Republic of Jordan) and Guy E. Ootob (Nigerian Federal Ministry of Works and Housing).





Project Engineer Lloyd Crowther (TRB) and Correspondent Luiz R. Soares (Brazil).

City and Regional Planning within the Directorate General of Housing, Building, Planning, and Urban Development for Indonesia. He described the structure and functions of the Indonesian road network (55 000 km) in the context of regional development. National development goals for Indonesia include balanced development among regions and higher national levels of equity, growth, and stability. Problems in local road development include societal reaction to development, availability of national resources, economic justification, financial capability, road standards and specifications, and operational arrangements among different levels of government.

Research needs in Guyana were presented by Phillip Allsopp, formerly chief highway engineer and now partner in a Guyana consulting firm. His suggestions included research on (a) loss of fines from untreated road surfaces, (b) width of clearing for roads through tropical forests where there is heavy rainfall and intense sunlight, (c) ero-

sion control in areas that are composed of cohesionless sand and have 100 in of rainfall per year, (d) reduced tire pressures for heavy vehicles on untreated surfaces, (e) safe and economical vehicle speeds in the context of road maintenance, (f) light panel decks for low-cost bridges, and (g) use of coarser grades of laterite soils for concrete. Allsopp also proposed that bypass test strips for maintenance studies be included whenever a new penetration road is built.

Pascual A. Caballero is director of the Bureau of Local Roads in the Philippines Ministry of Public Highways. He stated that the Philippines has about 87 500 km of local (barangay) roads in its total network of 128 000 km. Construction and maintenance of barangay roads is a joint responsibility of the national government and the smallest political unit, the barangay. The principal problems in this work arise because of the country's terrain and large number of river crossings. Caballero stated that the project compendiums have been useful, particularly with regard to drainage structures and river crossings.

The sixth panelist was Guy E. Ootobo, assistant director for federal highway construction within the Nigerian Federal Ministry of Works and Housing. Ootobo summarized major points that had been made by the other panelists, particularly with respect to Nigerian concerns. His emphases included the following points: (a) low volume does not imply a low level of importance for roads: there can be societal advantages that are more important than economic justification; (b) consideration should be given to surface treatment as an initial construction strategy (many low-volume roads carry heavy axle loads that are a great problem in Nigeria); (c) adequate training of construction and maintenance supervisors is essential; and (d) a major problem is to get adequate data for planning and design. Ootobo stated that the project compendiums are useful and that many more developing-country ministries of works should receive these publications.

A number of significant contributions were made during the open discussion that followed the panel presentations. Some excerpts from the audience participation follow:

"There is a basic need in Tanzania for simplified planning procedures. We need better methods for establishing maintenance priorities and for organizing maintenance units. We need better and simpler techniques for slope stabilization in mountainous regions. There is a tremendous need for coordinating the problem-solving activities of developing countries."

"More use needs to be made of local engineers and consultants in developing countries. Technical publications should be available in the language of the country, and must be put in the hands of the right people."

"Sierra Leone is not averse to labor-intensive methods but believes more can be achieved through mechanized construction. We need to have incentives for local engineers to work for the national ministry. We should join with neighboring African countries to develop our road technology."