

JULY 2007 MEETING

Wednesday, July 11, 2007

TECHNICAL PROGRAM

Advanced, Modern and Innovative Technologies used for Asphalt and Concrete Pavement Surface Courses at the Houston Airport Systems

Speaker: [Adil Godiwalla, P.E.](#) Tel. 281-233-1934, Assistant Director, Civil Projects Division, Dept. of Aviation, Houston Airport Systems.

PRESENTATION SUMMARY

To a room of about 60, Mr. Godiwalla a licensed professional engineer with an M.S. in Civil Engineering from the University of Missouri at Rolla, and with 23 years' experience in Airport Engineering, gave a slide presentation entitled, *Advanced, Modern and Innovative Technologies used for Asphalt and Concrete Pavement Surface Courses at the Houston Airport Systems.*

Mr. Godiwalla said Houston's airport systems are fourth in the US and sixth in the world in terms of capacity. Houston has three airports: Bush, Hobby and Ellington. He spoke of paving runways with Novaphalt, a polymer modified asphalt first used at Hobby, that improves certain properties of hot mixed asphaltic concrete such as doubling of its modulus of elasticity. Portland cement concrete is often constructed, with no expansion joints and using 0.5% reinforcing.

Mr. Godiwalla said 10 years ago Houston started using Type II Portland Cement for their runways to mitigate the sulfate attacks they were experiencing on runways at Hobby and Ellington. Also they are now using higher fly ash to cement ratios in the concrete mix, with the benefit of denser concrete which translates into higher durability. With cement running about \$85/ton and fly ash \$25-\$30/ton, the choice makes good economical sense.

Mr. Godiwalla described a case history of a new runway construction, demonstrating their runways' intolerance to deflections when loaded by aircraft weighing as much at 1.6 million pounds. The example was a new construction over a landfill, The landfill was removed and replaced with select fill compacted to 95% Modified Proctor. Afterwards they added 15 ft of soil surcharge above the fill for six weeks, after which the compacted fill consolidated 5 more inches. The surcharge was then removed, and the runway was constructed.

Mr. Godiwalla also spoke about rehabilitating older runways to extend their service lives. By adding new layers above the old layers, they can decrease the stress in the older layers to a tenth. This, coupled with an aircraft weight restriction for the rehabilitated runway can reduce the cost of the runway to half and also cut the construction schedule in half. Because there is no significant amount of material to haul off, the entire airport does not have to be shut down during the construction.

To download Mr. Godiwalla's slide presentation, [click here](#).

For a summary of Mr. Godiwalla's past FPA presentations, click one of the following:

[April 2005](#) Advanced, Modern and Innovative Technologies Used at Houston Airport System

[April 2002](#) Distress of Pavements: Asphalt and Concrete

[PAST PRESENTATIONS \(click here\)](#)

