

APRIL 2005 MEETING

Wednesday, April 20, 2005

TECHNICAL PROGRAM

Advanced, Modern & Innovative Technologies Used at Houston Airport System

Speaker: [Adil Godiwalla](#), P.E. Tel. 281-233-1934. Mr. Adil Godiwalla, P.E., Assistant Director, Civil Projects Division, Dept. of Aviation, Houston Airport Systems, has an M.S. in Civil Engineering from the University of Missouri at Rolla, 1966, is a licensed professional engineer in Texas, Illinois & Florida, and has over 39 years of Civil Engineering experience, including 21 years in Airport Engineering. He has presented over 40 technical papers on Advanced and Modern Airport Technologies.

PRESENTATION SUMMARY

To an audience of about 50, Mr. Godiwalla presented an overhead slide show entitled, "Advanced, Modern & Innovative Technologies used at the Houston Airport System," with special emphasis on stabilized materials. He talked about pavement construction at Houston's Bush and Hobby airports, speaking in detail about the addition of additives to clays to radically reduce their Plasticity Indices (PI's) while substantially increasing their bearing capacities.

According to Mr. Godiwalla, the City of Houston was the first to use Lime, Cement, Flyash (LCF) to construct an airport pavement base, a mixture developed by Dr. Nai Yang. This was used when the South Complex Bush runway was constructed in 1986, in which 1,000,000 tons of LCF was used. The additives (based on weight) were 4.0% Lime, 0.5% Cement and 9.5% Flyash, added to 12.5% bank sand and 73.5% of aggregate. The mixture tested out with an ultimate bearing strength of 1200 psi after 6 months. However, when tested again in 2000, its strength had increased three-fold, meaning that after 14 years of curing, they had the equivalent of 3000 psi concrete in the base.

Mr. Godiwalla also spoke about runway wear surfaces, saying runway pavements had to be much smoother than highway in order to prevent landing gear damage. He spoke about a type of asphalt used decades ago at Hobby, called "Novophalt Asphalt" that performed so well that airports around the world have used it as a model for their runway surfaces. It is a polymer-modified asphalt, 35% cheaper than concrete, and a good compromise because it can withstand a higher ambient temperature (about 105 deg. F) than normal asphalt.

To read a summary of Mr. Godiwalla's talk to the FPA in April 2002, [click here](#).

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