

they guaranteed that they would deliver a package from Torino to Tokyo now in twelve hours and it will only cost you \$2000 per kilo to have your parcel delivered... if you are lucky.

I am unable to talk about many more details of the National Aerospace Plane because there is a lot of secrecy attached to it and obviously it is a vehicle which not only can be a commercial vehicle, a so-called Orient Express, but also can of course perform a military mission. I was very surprised again to see one of my son's publications called "Popular Science" (fig. 7) which in the May edition of the last year contained many more details on the National Aerospace Plane than I am allowed to talk about. So I will have to complete my presentation on the National Aerospace Plane at this point but I would suggest that if you want many more details, as I said, than I am allowed to talk about, look in one of the magazines: "Popular Science".

In addition to the use of Titanium in airframes, there is also a lot of Titanium in an engine. Fig. 8 shows the advanced F 100 engine: it shows not the weight of Titanium which actually flies in the engine, but the amount of Titanium which is going into the engine as import weight. If we could replace the Nickel base materials with Titanium we could reduce the weight, and, as in the airframe, even more so than in the airframe, weight is very important in the engine.

For every pound in weight that you can save in the engine over the lifetime of the airplane it is worth about a thousand dollars. For every pound in weight saved in the engine, because of balancing effects, that is location of the centre of gravity of the aeroplane, you can save another five pounds in the airframe. So for one pound in weight saving in the engine, there is a total of six pounds weight saving, times perhaps a thousand vehicles in a fleet, and times however many pounds you can save. Very big numbers if you can replace Nickel with Titanium.