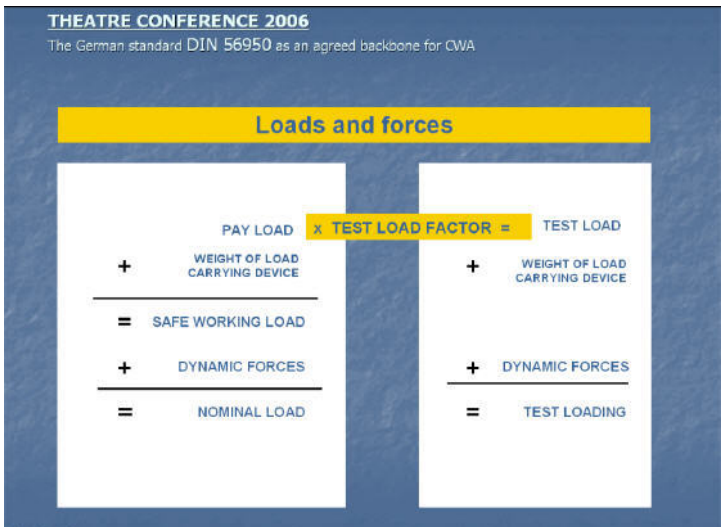


working load' instead of 'payload', so there is some confusion, but this confusion can be removed when we find a clear definition which is acceptable for all of us.

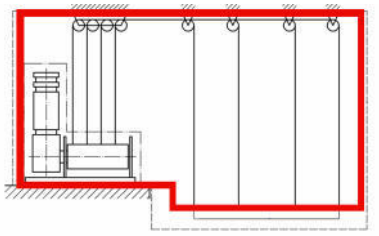
We also have to take account of the dynamic forces. These are very important, but the very old regulations in Germany only calculated with static loads, and here we have added the dynamic forces which occur in the case of an emergency stop from very high speeds; these can create forces which are very much higher than those relating to the static load. The total is what we call the NOMINAL LOAD, and the nominal load is the basis of all calculations in our Standard. Every calculation must be done taking account of the nominal load which includes all dynamic forces. Then we have the TEST LOAD FACTOR, which defines a test load. This is combined with the dynamic forces to create what we call the TEST LOADING. These are the main terms for loads and forces in the German standard.

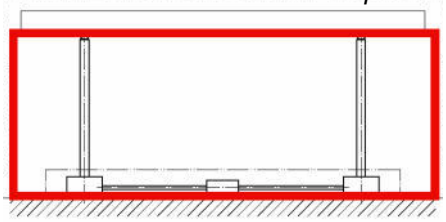
We now look at the safety principles for the individual parts of the systems as in the sketch on the right showing a fly bar system and an elevator installation. What we have within the red lines is the load-bearing equipment. Remember that this does not only apply to fly bars; it is the same for upper machinery and lower machinery – the same security safety ideas apply to all the systems. The structural elements of stage machinery must be designed to accommodate loads of twice the 'nominal load'. While the rest is also important, this is the main clause and that requires twice the 'nominal load'.

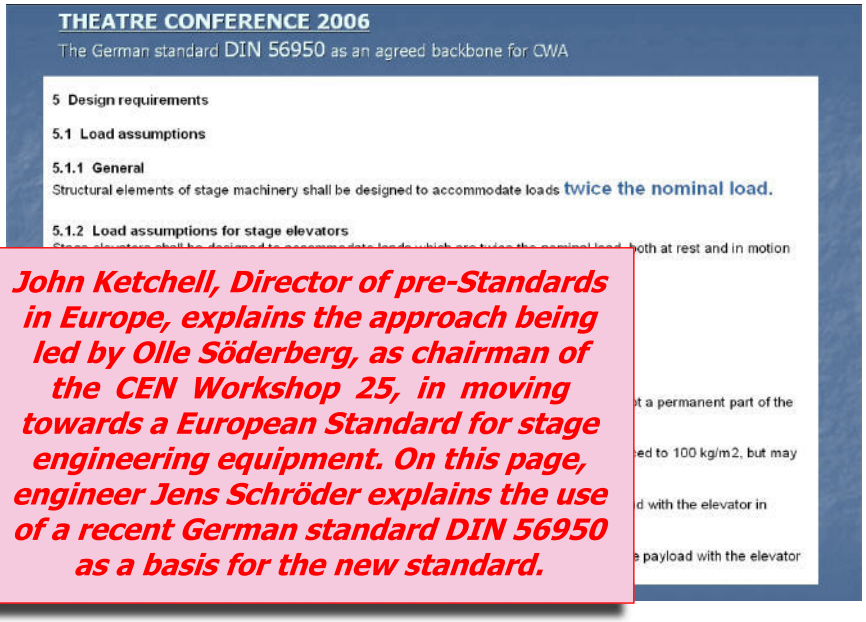
And this leads to some differences in understanding that have arisen in our discussions; this is not the same as having a safety factor of two for the calculation – that is not right. You have to make the normal calculations with all the safety factors which are appropriate, the right technical parameters, steel quality coefficients, etc; you have to take full account of all these factors, but you also have to make your calculation with an input of double the load. This is not the same as taking two as a safety factor; the safety factor is slightly higher.

Then we have made some load assumptions for the stage elevators. This is a point that we have discussed in Germany and we raised it again in the European working group; so why should the payload for an elevator in motion be fixed in the Standard? In a fly bar system you can buy anything you want; you can have a fly bar for 500 kg, or 100 kg, or even 10 kg if you want; anything is possible. But for elevators there is some history to take into account; in the older regulations in Germany 260 kg/m² (54 lbs/ft²) was specified for the payload of an elevator. But we agreed in our meeting last Saturday that we will make a change, and now you will find that the payload in motion can be decided between the clients and the manufacturers. So there is an example of something which you can specify just as you wish!

Note that the 'load-bearing' equipment is within the red line in each case and does not include the fly bar or the stage elevator platform







John Ketchell, Director of pre-Standards in Europe, explains the approach being led by Olle Söderberg, as chairman of the CEN Workshop 25, in moving towards a European Standard for stage engineering equipment. On this page, engineer Jens Schröder explains the use of a recent German standard DIN 56950 as a basis for the new standard.