the guiding principles we have discussed in Chapter 10 is also explored. In essence designers tend to have relatively little theory that enables them to get from problem to solution. Rather they tend to acquire considerable stores of knowledge about solutions and their possibilities or affordances.

So designers have the task of negotiating reconciliation between these two views of the situation they are dealing with. The problem view is expressed generally in the form of needs, desires, wishes and requirements. The solution view on the other hand is expressed in terms of the physicality of materials, forms, systems and components. Since these two views share no common language this reconciliation requires some very clever mental tricks indeed. In this view of the design process then we do not really see designing as problem solving in the traditional sense of that phrase. We do not see designing as a directional activity that moves from problem through some theoretical procedure to solution. Rather we see it as a dialogue, a conversation, a negotiation between what is desired and what can be realised.

Skilled facilitators of negotiations know that progress is often best made by avoiding some areas of dispute where resolution appears difficult and concentrating on others where things look more promising. Often this results in reaching some agreement on minor areas with a consequent build up of feelings of confidence and trust which then carries over into considerations of the more intractable issues. Some experienced designers have suggested that the drawing may cause problems in this negotiation with a client. The use of words rather than graphical images can offer a less solution-oriented view in this process. The well-known British product designer Richard Seymour has described how he presented ideas to British Rail who wanted to develop a new InterCity train. They had invited a number of leading designers to submit proposals. The Seymour/Powell submission was not based on drawings but on the verbal explanation to British Rail that their design would be 'heroic' in the manner of the British Airways Concorde and that it would once again make children want to become train drivers as in early times (Fig. 15.2). Similarly the Czech architect Eva Jiricna has described how she communicates with her clients in verbal rather than graphical media. She tells how 'I try to express in words what they (the clients) want, and then I try to twist it into a different statement and then draw it' (Lawson 1994). Through this device Eva seems to be able to avoid her clients making prejudgements based on their previous experience of the kinds of rather hi-tech materials she often employs. The verbal

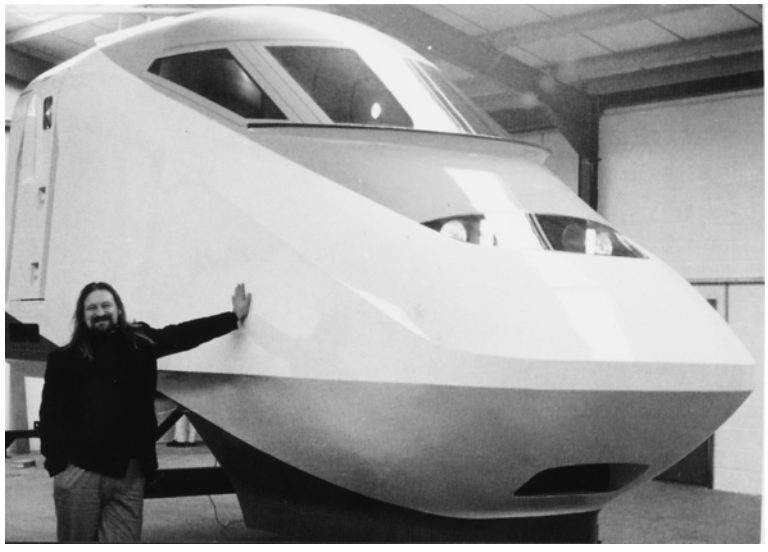

Figure 15.2
Richard Seymour with his design for a train intended to make children want to become engine drivers again

description allows people to interpret shades of meaning not allowed by the drawing. In the same way we can easily be disappointed by the film of a book we have previously read. During the reading we will have built up our own image of the characters and places which the film has no alternative but to contradict.

Nigel Cross has shown the importance of the conjunction between drawing and talking in design groups (Cross 1996). In his study a design group was trying to design a device for carrying a hiker's backpack on a mountain bicycle. Cross showed that well over an hour into the design process one member of the group introduced a design concept with the words 'maybe it's like a little vacuum-formed tray'. Prior to this point the team had been using the word 'bag' as a way of describing to each other what they were trying to create. The word 'tray' was sufficiently evocative without being too prescriptive, and this word then continued to be used by all the members of the team in turn as they drew alternative interpretations of how this might work. In the protocol that Cross was studying this moment of introducing the word 'tray' had enormous impact on the final design. Quite simply it changed the designers' view of the situation.

Eckert and Stacey (2000) showed in an interesting study of fashion designers how conversations about designs are largely based on references to previous solutions. They found that knitwear designers talking among themselves 'describe design almost exclusively in terms of combinations and modifications of design elements that they refer to either by category labels or by their origins'.