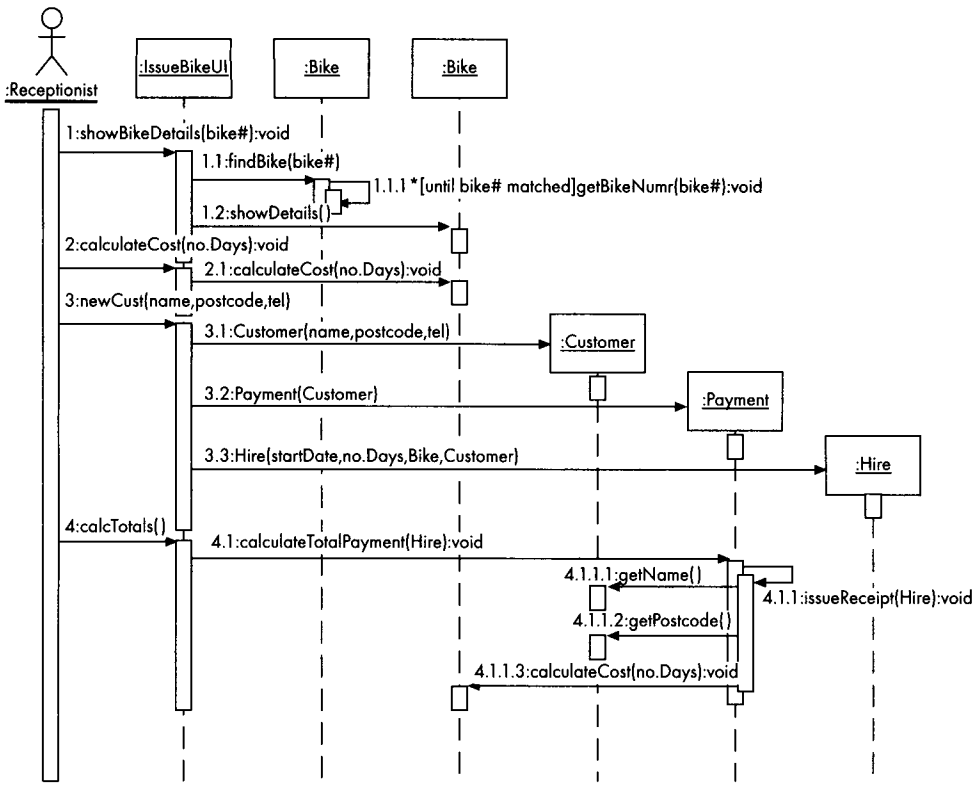

Figure 10.11 *Sequence diagram for the Wheels system – 'Issue bike' use case, successful hire scenario*

Wheels sequence diagram at design. The sequence diagram in Figure 10.11 shows how the process of issuing a bike has evolved from the analysis model. Because Wheels is a very small system, rather than introduce three new objects (an interface object, a control object and a collection object), we have added a single object (:IssueBikeUI) which combines the functions of interface and control objects. It controls the interaction between the actor and the system and it controls the main sequence of inter-object messaging. We have altered the Bike class so that it combines the functions of a collection and an entity class. The Bike class contains an array of bikes. It knows the identifier of each of the :Bikes.

The sequence of execution is as follows:

1 Presumably, at a higher level than this sequence diagram, the Receptionist has made a menu choice to issue a bike. This results in a message being sent to :IssueBikeUI indicating the bike# of the bike the customer has chosen.

2 :IssueBikeUI passes the bike# to Bike (the collection class) which iterates through the list of bike identifiers, sending a message to each :Bike in turn until it finds the one with a