

**Table 9-3**      Advanced Rules Governing Data Flow Diagramming

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- Q. A composite data flow on one level can be split into component data flows at the next level, but no new data can be added and all data in the composite must be accounted for in one or more sub-flows.
- R. The inputs to a process must be sufficient to produce the outputs (including data placed in data stores) from the process. Thus, all outputs can be produced, and all data in inputs move somewhere, either to another process or to a data store outside the process or on a more detailed DFD showing a decomposition of that process.
- S. At the lowest level of DFDs, new data flows may be added to represent data that are transmitted under exceptional conditions; these data flows typically represent error messages (e.g., “Customer not known; do you want to create a new customer”) or confirmation notices (e.g., “Do you want to delete this record”).
- T. To avoid having data flow lines cross each other, you may repeat data stores or sources/sinks on a DFD. Use an additional symbol, like a double line on the middle vertical line of a data store symbol, or a diagonal line in a corner of a sink/source square, to indicate a repeated symbol.

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(Adapted from Celko, 1987)