

# CASE 2

```
EVENT time: 595.8367870113224 type: 2 entity: 1
B Input: Start
toLayer3: seqnum: 3 acknum: 3 checksum: 2006 payload: ddddddddddddddddddd
toLayer3: packet being lost
toLayer3: seqnum: 4 acknum: 4 checksum: 2028 payload: eeeeeeeeeeeeeeeeeee
toLayer3: scheduling arrival on other side
B Input: End

EVENT time: 596.8941923276467 type: 2 entity: 0
A Input: Start
stopTimer: stopping timer at 596.8941923276467
A Input: Received Cumulative ACK | Expected: 3 Received: 4
A Input: End
```

ACK for 3 is lost, so  
ACK for 4 is cumulative

# CASE 3

Packet 12  
timed out

```
EVENT time: 2301.419415875728 type: 0 entity: 0
A Timer Interrupt | Retransmitting 12
toLayer3: seqnum: 12 acknum: -1 checksum: 2191 payload: mmmmmmmmmmmmmmmmmmmmm
toLayer3: scheduling arrival on other side
stopTimer: stopping timer at 2301.419415875728
stopTimer: Warning: Unable to cancel your timer
startTimer: starting timer at 2301.419415875728
```

# CASE 4

```
EVENT time: 4099.990844447157  type: 1  entity: 0
generateNextArrival(): called
generateNextArrival(): time is 4099.990844447157
generateNextArrival(): future time for event 1 at entity 0 will be 4157.353434858241
A Output: Start
toLayer3: seqnum: 22  acknum: -1  checksum: 2401  payload: wwwwwwwwwwwwwwwwwwwww
toLayer3: packet being lost
stopTimer: stopping timer at 4099.990844447157
stopTimer: Warning: Unable to cancel your timer
startTimer: starting timer at 4099.990844447157
A Output: End
```

```
EVENT time: 4222.192999053926  type: 2  entity: 1
B Input: Start
B Input: Sending Duplicate ACK: 22
toLayer3: seqnum: 22  acknum: 22  checksum: 2424  payload: wwwwwwwwwwwwwwwwwwwww
toLayer3: scheduling arrival on other side
B Input: End
```

```
EVENT time: 4229.042298654133  type: 2  entity: 0
A Input: Start
stopTimer: stopping timer at 4229.042298654133
A Input: Received ACK: 22
A Input: End
```

packet 22 is lost, so  
when B gets >22, it sends  
a duplicate ACK for 22

# CASE 5

```
EVENT time: 4868.081301309244 type: 0 entity: 0
A Timer Interrupt | Retransmitting 25
toLayer3: seqnum: 25 acknum: -1 checksum: 2464 payload: zzzzzzzzzzzzzzzzzzzzzzz
toLayer3: scheduling arrival on other side
stopTimer: stopping timer at 4868.081301309244
stopTimer: Warning: Unable to cancel your timer
startTimer: starting timer at 4868.081301309244

EVENT time: 4868.385876033814 type: 1 entity: 0
generateNextArrival(): called
generateNextArrival(): time is 4868.385876033814
generateNextArrival(): future time for event 1 at entity 0 will be 4922.171697134312
A Output: Start
toLayer3: seqnum: 29 acknum: -1 checksum: 2028 payload: dddddddddddddddddddddd
toLayer3: scheduling arrival on other side
stopTimer: stopping timer at 4868.385876033814
startTimer: starting timer at 4868.385876033814
A Output: End

EVENT time: 4872.0787377544475 type: 2 entity: 1
B Input: Start
B Input: End

EVENT time: 4874.310342722861 type: 2 entity: 1
B Input: Start
B Input: Sending Duplicate ACK: 26
toLayer3: seqnum: 26 acknum: 26 checksum: 1992 payload: aaaaaaaaaaaaaaaaaaaaaa
toLayer3: scheduling arrival on other side
B Input: End

EVENT time: 4878.427808465834 type: 2 entity: 0
A Input: Start
stopTimer: stopping timer at 4878.427808465834
A Input: Received Cumulative ACK | Expected: 25 Received: 26
A Input: End
```

A retransmits 25, but B wants 26, so it sends a duplicate ACK, which is cumulative on A side.