Delayed Message Reports

This section is designed to assist you in isolating the cause of a report from users of a delayed message.

Occasionally, a voice mail user will, for some reason, not hear a message in a timely manner. While the reasons for the lack of promptness vary, the result is that the user believes that Repartee or Replay Plus has failed in its duty to deliver messages promptly. In most cases, reports of delayed messages can be diagnosed and traced to a particular user error or configuration problem. It is important to deal with such reports promptly, so that your customer does not lose confidence in the voice mail system, and so that future occurrences of the same situation may be avoided.

This document will help you analyze delayed message reports and correct any user operation or configuration problems. The first section explains the difference between delayed messages, delayed lamps, and delayed message delivery. The chapter then lists the typical causes of such problems. To resolve a particular problem, read about the Diagnostic Traces feature, then refer to the last section for details on how to resolve each type of report of delayed messages, delivery, or lamps.

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Delayed Messages, Lamps, or Delivery

It is necessary to distinguish between "delayed message", "delayed lamp", and "delayed delivery."

**Delayed message** means that a subscriber calls the voice mail system to retrieve messages, and gets messages that were left before a previous attempt to retrieve messages by that subscriber. The subscriber should have received these messages during a prior call to the system.

**Delayed lamp** means that the voice mail system does not light a subscriber's message waiting indicator promptly to notify the subscriber that he or she has new messages. There is a substantial delay between the time a message is left for a subscriber and the time the subscriber's message waiting lamp is lit.

**Delayed delivery** means that the voice mail system calls to notify the subscriber that he or she has new messages, yet when the subscriber checks messages, the subscriber discovers that there are messages that should have been delivered earlier. In other words, the system fails to notify the subscriber of messages in a timely manner.

In all three cases, the system seems to withholds certain messages from the subscriber, either by failing to read a message when the subscriber checks messages, or by failing to actively notify the subscriber that messages are waiting.

**Causes of Delayed Messages**

1. **Subscriber hangs up before listening to all messages**
   A subscriber may hang up before the system plays all of the subscriber's messages.

2. **Caller stars out before listening to all messages**
   A subscriber may star out of the system (by pressing 3 stars: * * *) before the system plays all of the subscriber's messages.

3. **Truncation or rounding of timestamp in versions of Repartee prior to version 6.3 may mislead subscribers**
   Prior to version 6.3, Repartee time stamped each message with a time rounded down to a ten minute interval (8:30, 8:40, 8:50, etc.), which may cause a subscriber to think that a message is older than it really is.

4. **Computer clock does not match the subscriber's watch**
   Personal computer clocks can show a different time than a subscriber's watch. This can result in a subscriber thinking a message is older than it really is.

5. **Subscriber calls the system to leave a message and doesn't check messages**
   A subscriber who calls the voice mail system for the express purpose of leaving a message may skip over new messages and go directly to leaving a message.

6. **Subscriber remembers calling to check messages when he or she did not**
   A subscriber may recall calling the system to check messages when he or she did not.
7. **Subscriber relies on message delivery for prompt delivery of messages, rather than calling the system**  
   A subscriber relies on the system to call the subscriber to deliver messages, which can, for good reason, occur long after the message is recorded.

8. **Subscriber misunderstands the use of the star key**  
   A subscriber misuses the star key and inadvertently skips over new messages.

9. **Subscriber signs in with the wrong Personal ID**  
   Two subscribers have similar ID's. One subscriber accidentally signs in as the other, then later signs in correctly and gets his or her own older messages.

10. **Subscriber has two or more Personal IDs**  
    A subscriber may have more than one Personal ID. Such a subscriber may confuse which messages have been checked recently.

11. **Subscriber waits too long to respond to a question, and his or her touchtone is taken as a response to the following question**  
    A subscriber inadvertently responds No when the system is about to offer a new message.

12. **Subscriber confuses reviewing messages with checking new messages**  
    The system will read a timestamp for a message when it is being reviewed as well as when it is being read as a new message. A subscriber may review a two-day-old message and believe it is the first time he or she has heard the message.

**Causes of Delayed Lamps or Delayed Delivery**

13. **The port configured for dial-outs is an Answer/Dial port, not a dedicated Dial port**  
    If the voice mail system answers calls on a port that is relied upon to dial out for message delivery purposes, then the system's ability to dial out can be compromised by incoming call traffic.

14. **Only one dial-out port is dialing out for both message delivery and message waiting lamp activation**  
    When there is only one dial-out port used to call subscribers for message delivery, the subscribers tie-up the port. While the first subscriber is listening to his or her messages, the system cannot call any other subscribers to notify them of new messages.

15. **The switch does not reliably activate message waiting indicators**  
    The voice mail system sends the switch the correct codes to activate message waiting indicators, but the switch does not always light the lamps.

16. **The lamp retries value on the EasyMade Switch Setup Screen, Page 2 is set too low**  
    The system should be allowed to try activating a lamp several times. If the system fails to light a lamp on the first attempt, one or more subsequent attempts should be made.

17. **There are not enough dial-out ports to handle the dial-out traffic**  
    A very busy system may not have enough dial-out ports to light lamps and notify subscribers...
of new messages promptly.

18. **Message Delivery schedule is inadequate**
   If the message delivery dial-out schedule is configured improperly, there may be inadequate attempts made to notify a subscriber of his or her messages.

19. **Subscriber misunderstands Batch delivery method**
   Even if a subscriber's message delivery schedule is set properly, the **Batch** delivery method may contribute to the perception of message delay. **Batch** delivery is often misunderstood.

20. **Defect in versions prior to 6.2 of Repartee may prevent message lamp activation and message delivery from being performed promptly**
   Versions of Repartee prior to version 6.2 suffered from a software defect that would prevent Repartee from dialing out properly. This problem affected both the illumination of message waiting indicators and message delivery.
Using Diagnostic Traces

In many cases, it helps to use the Diagnostic Traces feature to resolve a particular problem with delayed messages, lamps, or delivery. You may turn on Diagnostic Traces to capture more detailed information than is recorded in the call report log (REPLOG).

For example, the phone trace is very useful when diagnosing reports of delayed message delivery. The phone trace is activated by entering ^# T51 in the Startup Options field, on the EasyMade Application Setup Screen, Page 6. The phone trace is deactivated by deleting ^# T51 from the Startup Options field, exiting from the voice mail software to DOS, and then restarting the system.

With the phone trace diagnostic on, the system will write additional information about each phone call it handles into the current call report log file. By examining a Call Report Log Report, you can determine why a subscriber has experienced a delayed message.

A REPLOG file without the phone trace activated contains lines of data with several fields separated by commas in each line. (See Figure 1) Each line represents part of a call or an entire call made to or from the voice mail system.

When the phone trace is turned on, additional information will be written to the call report log. The diagnostic records will be inserted between the standard call records. Diagnostic records will not be written in the nine field format described above. Here are some example diagnostic records:

```
1 03,"START CALL 90/08/22 15:02:11 type=0                                    "2 03,"ID [Piras] Tags [9 49 128] [9 49 128] "3 03="PIRAS CHECK NEW MESSAGES ..."
4 03="PIRAS Offered [McKae, Chris] [9 60 64] TTDONE tt=[1] "5 03="PIRAS Play msg. recorded at 90/08/22[14:56:12] cc=0 tt=[ ] "6 03="PIRAS DEACT [9 49 128][9 60 64][90/08/22] [14:56:12] cc=0...
7 03="PIRAS Read Messages from [McKae, Chris] ended NODATA 
8 03="PIRAS Owner Call ended 
9 03="PIRAS Owner Call ended 
10 03="PIRAS Owner Call ended 
11 03,"END CALL cc=0"
```

Figure 1: Sample diagnostic record from Repartee version 6.3 and Replay Plus version 1.2

These records show what happened when Pat Piras, whose ID is PIRAS, called in and listened to a message from Chris McKae.

Line 1 - shows when the call was started.
Line 2 - personal ID PIRAS was entered, internal tags are noted
Line 3 - shows that PIRAS is the ID for an owner call from Pat Piras
Line 4 - Pat Piras enters the conversation to check new messages
Line 5 - The system offered a message from Chris McKae, who’s tag is [9 60 64]. tt=[1] means that Pat responded with a touchtone 1 (yes).
Line 6 - This shows that the message was played, when the message was recorded and that Pat pressed no touchtones during the message.
Line 7 - The message was DEACTivated as a new message.
Line 8 - There are no more (NODATA) messages from Chris McKae.
Line 9 - Pat ended the call.
Line 10 - The normal call report log record as described earlier.
Line 11 - The call ended. cc=0 means there were no errors during the call.
Figure 2: Sample diagnostic record from Repartee version 6.4 and Replay Plus version 2.0

These records show what happened when Pat Piras, whose ID is PIRAS, called in and listened to a message from Chris McKae.

Line 1 - shows when the call was started.
Line 2 - personal ID PIRAS was entered, internal tags are noted
Line 3 - shows that PIRAS is the ID for an owner call from Pat Piras
Line 4 - Pat Piras enters the conversation to check new messages
Line 5 - The system offered a message from Chris McKae, who’s tag is [9 25 64]. tt=1 means that Pat responded with a touchtone 1 (yes).
Line 9 - This shows that the message was played, when the message was recorded and that Pat pressed no touchtones during the message.
Line 10 - The message was DEACTivated as a new message.
Line 11 - There are no more messages from Chris McKae (ended)
Line 12 - The system offered a message from Pat’s message box
Line 14 - This shows that the message was played, when the message was recorded and that Pat pressed no touchtones during the message.
Line 15 - The message was DEACTivated as a new message.
Line 16 - There are no more (NODATA) messages for Pat Piras.
Line 17 - Pat pressed and * key.
Line 18 - Pat pressed the * key a second time.
Line 19 - Pat ended the call.
Line 20 - The normal call report log record as described earlier.
Line 21 - The call ended. cc=0 means there were no errors during the call.
<table>
<thead>
<tr>
<th>Field</th>
<th>Field Name</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Port</td>
<td>03</td>
<td>The port handling this call</td>
</tr>
<tr>
<td>2</td>
<td>Date</td>
<td>&quot;90/08/22&quot;</td>
<td>The date of the call in YY/MM/DD format</td>
</tr>
<tr>
<td>3</td>
<td>Time</td>
<td>&quot;14:57:40&quot;</td>
<td>The time of the call in HH:MM:SS format</td>
</tr>
<tr>
<td>4</td>
<td>Length of Call</td>
<td>56</td>
<td>The length of the call in seconds</td>
</tr>
<tr>
<td>5</td>
<td>Origin</td>
<td>&quot;A&quot;</td>
<td>The origin of the call:</td>
</tr>
<tr>
<td>6</td>
<td>Type of Call</td>
<td>&quot;Owner&quot;</td>
<td>Type of call:</td>
</tr>
<tr>
<td>7</td>
<td>Status of Call</td>
<td>&quot;Complete&quot;</td>
<td>Status of Call:</td>
</tr>
<tr>
<td>8</td>
<td>System ID</td>
<td>&quot;SANDY&quot;</td>
<td>ID of caller or message box owner (Blank=Public call)</td>
</tr>
<tr>
<td>9</td>
<td>Name of Caller</td>
<td>&quot;Simmons&quot;</td>
<td>Name of caller or message box (Blank=Public transfer to operator)</td>
</tr>
</tbody>
</table>

**Replog Data Fields**

- **Field 1**: Port
  - Example: 03
  - Description: The port handling this call

- **Field 2**: Date
  - Example: "90/08/22"
  - Description: The date of the call in YY/MM/DD format

- **Field 3**: Time
  - Example: "14:57:40"
  - Description: The time of the call in HH:MM:SS format

- **Field 4**: Length of Call
  - Example: 56
  - Description: The length of the call in seconds

- **Field 5**: Origin
  - Example: "A"
  - Description: The origin of the call:
    - A: Answered incoming call or collision
    - C: Continued (Call restarted)
    - D: Dialed out

- **Field 6**: Type of Call
  - Example: "Owner"
  - Description: Type of call:
    - <Phone#>: System either placed a call without reaching anyone or made a lamp dial-out
    - Complete successfully: Call completed
    - FAILURE: System failure occurred
    - Guest: Call from a guest
    - Locked: Caller ID locked out
    - Msgbox: Call for a message box
    - Owner: Call from a subscriber
    - Public: Public call
    - Remote: Network Call
    - Restart: System was restarted
    - Shutdown: System was shutdown
    - Transfer: Caller transferred successfully
    - Xfer op: Transfer to operator
    - Xfer ID: Operator ID transfer

- **Field 7**: Status of Call
  - Example: "Complete"
  - Description: Status of Call:
    - Busy tone: Dial out reached a busy tone
    - Complete successfully: Call completed
    - Error pressed: Error during call or **
    - Incomplete: Dial out interrupted by F4
    - Intercept: Dial out got intercept tone.
    - No Answer: Dial out got no answer
    - No connect connected: Dial out didn't get
    - No ID: Dial out was answered without an ID
    - No msg.: Public caller hangup

- **Field 8**: System ID
  - Example: "SANDY"
  - Description: ID of caller or message box owner (Blank=Public call)

- **Field 9**: Name of Caller
  - Example: "Simmons"
  - Description: Name of caller or message box (Blank=Public transfer to operator)

Figure 3: Call report log (REPLOG) Data Fields
If other calls were going on concurrently, records for them would appear between the records for Pat's call. The number at the beginning of each diagnostic record identifies the port handling the call, and can be used to identify records for a particular call.

Resolving Delayed Messages

Here are detailed explanations of how to resolve each of the causes of delayed messages. To understand of the causes of delayed message reports, you may want to first read through just the explanations of each type of delayed message report, without studying the call report log examples. When you need to read a customer's call report log with diagnostic traces, reread the appropriate section here to learn how to interpret the report log's diagnostics.

1. **Subscriber hangs up before listening to all messages**

   Hanging up on the system may result in not all messages being heard. Take this example.

   While checking messages at 9:30am, Terry Black hears an urgent message from a co-worker, Sandy Simmons, asking Terry to take immediate action on several issues. At the moment, the most important thing that Terry can do is act on the items Sandy mentioned. After hearing Sandy's message, Terry hangs up, never allowing the system to offer the rest of the new messages, and runs off to take care of business.

   At 11:45am Terry calls the system and gets messages recorded at 9:00am. Terry thinks that the system has delayed these messages. The messages were available at 9:30am, but Terry did not finish checking messages before hanging up.

   The following call report log file shows the call during which Terry hung up.

   ```
   03,"START CALL 90/09/05 09:31:31 type=0 "
   03,"ID [889 ] tags [9 195 128] [9 195 128] "
   03,"=889 OWNER call from [Black, Terry ][9 195 128] "
   1 -> 03,"=889 CHECK NEW MESSAGES "
   2 -> 03,"=889 Offered [Simmons, Sandy ] [9 60 64] TTDONE tt=[1] "
   3 -> 03,"=889 Play msg. recorded at [90/09/05][09:29:52] cc=0 tt=[ ] "
   03,"Msg DEACT [9 195 128][9 60 64][90/9/5][9:29:52] cc=0 "
   03,"=889 Read Messages from [Simmons, Sandy ] ended NODATA "
   4 -> 03,"=889 Offered [White, Pat ] [9 28 128] cc=-25 tt=[ ] "
   03,"=889 LEAVE MSGS no response "
   5 -> 03,"=889 OWNER call ended GOTHANGUP "
   03,"90/09/05","09:31:31", 365,"A","Owner ","Hung up ","889 ","Black Te"
   03,"END CALL cc=-24 "
   6 -> 03,"START CALL 90/09/05 11:44:20 type=0 "
   03,"ID [889 ] tags [9 195 128] [9 195 128] "
   03,"=889 OWNER call from [Black, Terry ][9 195 128] "
   03,"=889 CHECK NEW MESSAGES "
   7 -> 03,"=889 Offered [White, Pat ] [9 28 128] TTDONE tt=[1] "
   8 -> 03,"=889 Play msg. recorded at [90/09/05][09:01:26] TTDONE tt=[1] "
   03,"Msg DEACT [9 195 128][9 28 128][90/9/5][9:01:26] cc=0 "
   03,"=889 Read Messages from [White, Pat ] ended NODATA "
   03,"SAYVPS: cc=-31 tt=[*] on [172 2 126][119/152/42][202:8:99] "
   03,"SAYVPS: cc=-21 tt=[*] on [248 1 126][119/44/43][178:4:99] "
   03,"=889 OWNER call ended TTDONE "
   03,"90/09/05","11:44:20", 17,"A","Owner ","Complete","889 ","Black Te"
```
Terry Black calls the system and checks messages (line 1) at 9:31:31. The voice mail system offers and plays a message from Sandy Simmons (lines 2 & 3). Lines 4 and 5 show the system offering a message from Pat White, with no response from Terry (tt= [ ]), and the end of the call due to Terry hanging up.

When Terry calls in again at 11:44:20 (line 6), the system offers and reads a message from Pat White (lines 7 & 8). The message was available at 9:30, but Terry hung up and did not hear it then. At 11:45, Terry believes the message has been delayed.

The System Manager should explain to Terry that hanging up in the middle of message retrieval may result in not getting all new messages. Terry should check all new messages whenever calling Repartee. If Terry must hang up before hearing the prompt `"There are no further messages,"' he should try to call the system back as soon as possible.

2. **Caller stars out before listening to all messages**

A caller who is trained to press three stars ("*"*) to exit the voice mail system, instead of hang up, can leave the subscriber conversation without getting all of his or her messages, or may inadvertently bypass a message without leaving the conversation, saving that message as new in the process. A message of this sort will appear as a new message in a later call to the system.

The following call report log file shows a call during which Pat White starred out of the system.
Lines 1 through 5 show the subscriber, Pat White, being offered a message from Sandy Simmons at 1:19pm, with Pat staring out of the message and the system by pressing three stars (lines 3, 4, & 5). Later, when Pat calls the voice mail system at 3:45pm (line 6), Pat is offered the same message from Sandy (lines 7 & 8). Notice that at 1:19pm, Pat pressed the star key during the message from Sandy (line 3, tt=[*]), while at 3:45, Pat pressed the digit 1 (line 7, tt=[1]). When Pat is offered and played the message from Terry Black (line 8), Pat hears that the message was recorded at 1:00pm, and wonders why the system did not play the message during the previous call.

The System Manager should teach Pat the proper use of the 1 and 2 keys, and explain the application of the star key, emphasizing the possibility of skipping messages by inappropriate use of the star key.

3. Truncation or rounding of timestamp in versions of Repartee prior to version 6.3

In Repartee versions prior to 6.3, the timestamp is rounded down to the nearest ten minute interval. This means that a message for Terry Black left at 11:29am will be stamped as received at 11:20am. If Terry had checked messages at 11:28am and was told "There are no further messages", at 11:35am, when checking messages again, Terry will hear a message "recorded today at 11:20 am." It would appear that Repartee delayed Terry's message for at least eight minutes.

A rounded timestamp can easily explain a perceived message delay of ten minutes or less. However, a subscriber may perceive an even greater delay if he or she next checks messages several hours later. For example, Terry Black regularly leaves for lunch at 11:30am every day and checks messages a few minutes before leaving for lunch. One day, a message is left for Terry at 11:29, after she checked her messages at 11:27. The message is stamped 11:20am. After lunch Terry has meetings and does not check messages until 3:00pm. When Terry hears the message "recorded today at 11:20am", and recalls checking messages just before 11:30, Terry may perceive that Repartee delayed the message until 3:00pm. If Terry had called Repartee at 11:30am, she would have received the message and perceived a much smaller delay, if any at all.

The following call report log file shows a sample of timestamp rounding causing confusion.

```
25,"START CALL 90/09/11 11:27:06 type=0                                        "
25","=889  OWNER call from [Black, Terry ][9 195 128]                        "
1 -> 25","=889  CHECK NEW MESSAGES                                           "
25,"SAYVPS: cc=31 tt=[*] on [212 1 126][119/44/43][201:2:99]              "
25,"SAYVPS: cc=21 tt=[*] on [248 1 126][119/44/43][178:4:99]              "
25","=889  OWNER call ended TTDONE                                        "
25,"90/09/11","11:27:06", 17,"A","Owner ","Complete","889 ","Black Te" 
25,"END CALL cc=0                                                         "
2 -> 25,"START CALL 90/09/11 11:35:06 type=0                                        "
25","=889  OWNER call from [Black, Terry ][9 195 128]                        "
25","=889  CHECK NEW MESSAGES                                           "
3 -> 25","=889  Offered [Box of Black, T] [5 0 0] TTDONE tt=[1]               "
4 -> 25","=889  Play msg. recorded at [90/09/11][11:27:25] cc=0 tt=[ ]  "
25,"Msg DEACT [9 195 128][5 0 0][90/9/11][11:27:25] cc=0                   "
25","=889  Read Messages from [Box of Black, T] ended NODATA               "
25,"SAYVPS: cc=31 tt=[*] on [172 2 126][119/152/42][202:8:99]           "
```
Terry Black calls Repartee at 11:27:06 and checks new messages (line 1). A subsequent call at 11:35:06 (line 2) reveals a message box message that is offered and read (lines 3 & 4) and then stamped 11:20am. The message did not really arrive until 11:27:25, as is shown in line 4, after Terry's call at 11:27:06.

Terry's system manager should make sure that all subscribers understand the way Repartee timestamps messages. On systems using Repartee 6.2 or earlier, subscribers should be aware of the rounding method Repartee uses for timestamping when they listen to their messages. All versions of Replay Plus and Repartee version 6.3 and higher stamps messages with times that are accurate to the minute.

4. PC Clock does not match the subscriber's watch
A subscriber may perceive a message was delayed if the computer clock for the system is slow or set incorrectly. If the computer clock is running 10 minutes behind a subscriber's watch, the timestamp that the voice mail system attaches to a message will be ten minutes behind. If we add a ``slow'' computer clock to the example above, Terry Black's message would have been left when her watch read 11:29am, but the PC clock read 11:19am.

Since the voice mail software gets its time from the computer clock (and not from Terry's watch), the timestamp would come from the computer clock. This would mean that Terry would hear `recorded today at 11:19am` for a message that was left at 11:29am. If Terry had checked messages at 11:28 and gotten `no further messages`, then had checked again at 11:30am and gotten a message from 11 minutes earlier, Terry would perceive that the system was more than 10 minutes late in delivering the message.

In versions of Repartee prior to version 6.3, the perceived message delay due to an incorrect or slow personal computer clock can be aggravated by the rounded timestamping. Since Repartee gets its time from the computer clock (and not from Terry's watch), the timestamp is always rounded down to the nearest ten minute interval of the computer clock. In the above example, this would mean that Terry would hear `recorded today at 11:10am` for a message that was left at 11:29am. If Terry had checked messages at 11:28 and gotten `no further messages`, then had checked again at 11:30am and gotten a message from 20 minutes earlier, Terry would perceive that Repartee was almost 20 minutes late in delivering the message.

Encouraging the system manager to regularly reset the voice mail computer's clock to the correct time will resolve such problems.

5. Subscriber calls to leave a message and doesn't check messages
A subscriber who calls the system specifically to leave a message may respond No to the question `You have two new messages. Would you like to check them?`` and move directly to leave a message. For example, Terry Black may call the system at 11:00am in order to leave Pat White a message. Terry may choose not to listen to her personal messages at the that time. At 3:00pm, Terry calls to check messages and gets messages from 10:00am. Terry remembers calling the system at 11:00am, but forgets that she skipped over checking new messages at that time. Terry would believe that the system has delayed the messages.

The following call report log file shows a subscriber calling the voice mail system, but failing to check new messages.
This call report log shows two calls by the same subscriber. The first call, at 8:44am, does not include a diagnostic line that reads `CHECK NEW MESSAGES.` Normally, this diagnostic line would appear immediately after line 1. Instead, the subscriber left a message for another subscriber (line 2). Later, at 10:30am, the same subscriber did check new messages (line 4), and was offered and played a message from 8:30am (line 5).

Subscribers have complete control over the subscriber conversation. If they choose to postpone listening to new messages, the system cannot force them to listen to the message. It is the responsibility of each subscriber to check messages in a timely fashion.

6. **Subscriber remembers checking for new messages when he or she did not**

A subscriber may remember calling to check for messages when he or she actually did not. This may happen if a subscriber is very busy during the day and means to check messages regularly, but never gets a chance to. Terry Black, for example, may normally check messages every two hours. Terry is not used to hearing a message that is more than a few hours old. But, one day Terry is very busy and does not check for messages in the afternoon at the usual times, although Terry intends to.

The next morning Terry hears messages from 3:00pm of the previous day, and thinks the system delayed the messages. Terry doesn't recall not checking messages.

A call report log report can be generated for the subscriber who reports a delayed message to determine when the subscriber really did call the system.

7. **Subscriber relies on delivery for prompt delivery of messages, instead of calling the voice mail system**

At sites where subscribers rely on message waiting indicators or message delivery to inform them of new messages, subscribers become accustomed to glancing at their message waiting lamps to
decide if they should check messages. In addition, some subscribers may only check messages when the system calls them with a new message to deliver. Each of these actions may be delayed on a busy system.

For example, Pat White only calls to retrieve messages when the message waiting lamp is lit. Due to a configuration error or other problem, the lamp is not lit promptly. Pat finally calls the system for another reason, and is surprised to find new messages waiting. Pat believes that the system has delayed delivering the messages. Ways to speed up the lighting of message waiting indicators is described in items 13 - 17 under Resolving Delayed Lamps and Delivery.

In another case, Terry Black has the voice mail system programmed to call every 30 minutes to notify her of new messages. Terry steps out to get coffee when the system calls immediately after a message is left. Terry is then in a meeting when the system calls again 30 and 60 minutes later, and at lunch when it makes its fourth and fifth attempts to notify her.

Upon returning from lunch, Terry receives a call from the system and hears a message that may be three hours old. To Terry, it appears that the system has delayed notifying her of this message. The following call report log file, without any diagnostic traces, shows that the system had been attempting to contact Terry Black every half hour, without success.

```
01,"90/09/11","11:45:16", 55,"A", "Msgbox","Complete","12","Box of Bl"
04,"90/09/12","11:45:41", 22,"D","12","No answe","889","Black Te"
04,"90/09/12","12:15:00", 22,"D","12","No answe","889","Black Te"
04,"90/09/12","12:45:00", 22,"D","12","No answe","889","Black Te"
04,"90/09/12","13:15:00", 22,"D","12","No answe","889","Black Te"
04,"90/09/12","13:45:00", 22,"D","12","No answe","889","Black Te"
04,"90/09/12","14:15:00", 67,"D","Owner","Complete","889","Black Te"
```

The voice mail system does not know when a subscriber is at his or her desk, and will not continuously try to contact a subscriber to deliver messages. If the subscriber is not in when the system calls, it will try to contact that subscriber again according to the delivery schedule specified for that particular subscriber.

Repartee version 6.4 includes a Caller Enrollment feature which may contribute to this problem. If the site is using Caller Enrollment, the voice mail system will not call a user to deliver messages until the user completes the enrollment conversation. The system will attempt to light a message lamp, if available, but will not call the user to deliver messages.

8. **Subscriber misunderstands the use of the star key**

If a caller misuses the star key, he or she may inadvertently skip over new messages. One such case is when the system is introducing messages. For example, at 10:15am Terry Black checks for new messages and hears:

```
```
Sandy Simmons left a message. Would you like to hear it?```
```

Terry just spoke to Sandy in person moments before, so decides to skip the message for now, and responds by pressing the star key. The system interprets the star to mean **skip listening to messages altogether**, and proceeds to the next portion of the subscriber conversation:

```
```
Would you like to leave any messages?```
```

Terry may have had other new messages, but by pressing the star key, Terry passed by the chance to hear them. When Terry calls in again at 12:15pm to check new messages, she hears..."
messages that were recorded prior to her call at 10:15am. Terry will perceive that the system is delaying messages. The proper way to skip a message is to respond with a "2" for "No" when the system asks "Would you like to hear it?"

The following call report log file shows a subscriber misusing the star key during a call to the voice mail system.

```
03, "START CALL 90/09/06 10:16:22 type=0"  "
03, "ID [889] tags [9 195 128] [9 195 128]"  "
03, "=889 OWNER call from [Black, Terry] [9 195 128]"  "
03, "=889 CHECK NEW MESSAGES"  "
1 -> 03, "=889 Offered [Simmons, Sandy] [9 60 64] TTDONE tt=[*]"  "
2 -> 03, "SAYVPS: cc=-31 tt=[*] on [122 1 126][119/44/43][169:5:99]"  "
03, "=889 OWNER call ended TTESCHIT"  "
03, "=889 Offered [Simmons, Sandy] [9 195 128]"  "
03, "=889 CHECK NEW MESSAGES"  "
03, "=889 Offered [Simmons, Sandy] [9 60 64] TTDONE tt=[1]"  "
3 -> 03, "=889 Play msg. recorded at [90/09/06][10:02:17] TTDONE tt=[1]"  "
03, "Msg DEACT [9 195 128][9 60 64][90/9/6][10:02:17] cc=0"  "
03, "=889 Read Messages from [Simmons, Sandy] ended NODATA"  "
4 -> 03, "=889 Offered [White, Pat] [9 28 128] TTDONE tt=[1]"  "
5 -> 03, "=889 Play msg. recorded at [90/09/06][10:05:42] TTDONE tt=[1]"  "
03, "Msg DEACT [9 195 128][9 28 128][90/9/6][10:05:42] cc=0"  "
03, "=889 Read Messages from [White, Pat] ended NODATA"  "
6 -> 03, "=889 OWNER call ended TTDONE"  "
03, "=889 Owner call from [Black, Terry] [9 195 128]"  "
03, "=889 CHECK NEW MESSAGES"  "
03, "=889 Offered [Simmons, Sandy] [9 195 128]"  "
03, "=889 CHECK NEW MESSAGES"  "
03, "=889 Offered [Simmons, Sandy] [9 60 64] TTDONE tt=[1]"  "
3 -> 03, "=889 Play msg. recorded at [90/09/06][10:02:17] TTDONE tt=[1]"  "
03, "Msg DEACT [9 195 128][9 60 64][90/9/6][10:02:17] cc=0"  "
03, "=889 Read Messages from [Simmons, Sandy] ended NODATA"  "
```

Notice in lines 1 and 2 that the owner was in the process of checking new messages and pressed the star key during a message from Sandy Simmons. Later, during another call, the same message is played (line 3), as is a message from Pat White (lines 4 & 5). Both messages were available when Terry signed in at 10:16am.

### 9. Subscriber signs in with the wrong Personal ID

Two subscribers may have similar Personal ID's. One subscriber can accidentally sign in as another. For example, Terry Black's ID is 889. Pat White's ID is 888. Terry usually signs in by pressing "11" after the Personal ID to skip over the prompts "Terry Black" and "Remember, 1 for Yes and 2 for No."

At 1:00pm, Terry calls the system and accidentally presses an extra digit "8." The touchtones entered were "888911." The system hears the first three "8" digits and immediately signs in Pat White. The system interprets the next three digits, "911," as responses to the next few prompts. Terry never hears "Pat White. Remember, 1 for yes and 2 for no." At the time Pat White does not have any messages, so Terry only hears "Would you like to leave any messages?". Terry assumes she has no new messages and stars out.

When Terry calls again at 2:00pm to check messages and presses the touchtone keys correctly, the system offers messages from 11:00am. Terry thinks that the system delayed the messages because of the call at 1:00pm. However, at 1:00pm Terry actually checked Pat White's messages.
The following call report log file shows Terry accidentally signing in as Pat White.

05, "90/09/13", "10:00:08", 78, "A", "Msgbox ", "Complete", "12", "Box of Bl"
05, "START CALL 90/09/13 10:31:17 type=0" "
05, "ID [888] tags [9 28 128] [9 28 128]" "
1 -> 05, "=888" OWNER call from [White, Pat] [9 28 128] "
05, "=888" CHECK NEW MESSAGES "
05, "SAYVPS: cc=-31 tt=[*] on [250 5 126] [119/148/42] [197:38:99] "
05, "SAYVPS: cc=-21 tt=[*] on [248 1 126] [119/44/43] [178:4:99] "
05, "=888" OWNER call ended TTDONE "
05, "END CALL cc=0" "
05, "START CALL 90/09/13 11:33:05 type=0" "
05, "ID [889] tags [9 195 128] [9 195 128]" "
2 -> 05, "=889" OWNER call from [Black, Terry] [9 195 128] "
05, "=889" CHECK NEW MESSAGES "
05, "=889" Offered [Box of Black, T] [5 0 0] TTDONE tt=[1] "
05, "=889" Play msg. recorded at [90/09/13] [10:0:10] TTDONE tt=[1] "
05, "Msg DEACT [9 195 128] [5 0 0] [90/9/13] [10:0:10] cc=0 "
05, "=889" Read Messages from [Box of Black, T] ended NODATA "
05, "SAYVPS: cc=-31 tt=[*] on [212 1 126] [119/44/43] [201:2:99] "
05, "SAYVPS: cc=-21 tt=[*] on [248 1 126] [119/44/43] [178:4:99] "
05, "=889" OWNER call ended TTDONE "
05, "END CALL cc=0" "

Notice that at 10:00am (line 1), there is a call from Pat White, and none from Terry Black. Then, at 11:33am (line 2), Terry Black called the system. Terry's claim of having called to check messages at 10:00am is not supported by the call report log.

The system reads the name of each subscriber as they sign in: `\ `<subscriber name>. Remember, 1 for yes and 2 for no." Subscribers may need to be trained to wait to hear their own name before moving on to listen to new messages. Without doing so, they may inadvertently check another subscriber's messages. The System Manager may also wish to eliminate Personal IDs that are similar enough to cause problems of this nature.

This problem may also be avoided if each subscriber sets a personal security code. In the example above, the system would interpret the extra digits as a response to the prompt, `Please enter your personal security code" and instead of signing Terry in as Pat White, Repartee would say, `I'm sorry, the security code you entered is not correct" and begin the conversation over at the opening greeting.

10. Subscriber has two or more Personal ID's

A subscriber may have more than one Personal ID. Such a subscriber is really two subscribers from the system's perspective.

For example, Terry Black is already a subscriber with the Personal ID 889. Terry wants to create several interview boxes to collect information from callers applying for a job opening at the company. However, Terry does not want to get the interview box messages along with her personal messages, but instead wants to check these messages at a different time. Terry adds another Terry Black to the system, with the Personal ID 778. Then Terry adds the interview boxes for the Terry Black with the ID 778. Terry also records a voice name for the new subscriber Terry Black with her own name and voice `Terry Black".
One problem is that Terry's personal messages are still left for the Terry Black with the Personal ID 889, but other subscribers may inadvertently leave messages for the new Terry Black with ID 778. If other subscribers leave messages for Terry by spelling her last name, the new Terry Black (ID #778) is offered first before the original Terry Black (ID #889) is.

For example, at 9:00am, Pat White wants to leave Terry a message and is prompted "Please spell the first 3 letters of the person's last name." Pat presses the touchtones "BLA" and is prompted, "Terry Black, press Yes to confirm." Pat presses 1 for Yes and leaves a message for the new Terry Black (ID# 778).

At 11:00am, Terry calls the system and enters the Personal ID 889 to check new messages. Terry hears several other messages, but not Pat's message. At the end of the day, Terry calls the system and enters the Personal ID 778 to listen to the interview box messages. Terry hears Pat's message from earlier that morning, and, not realizing that she's not supposed to hear subscriber-to-subscriber messages while signed in with ID 778, Terry thinks that the system has delayed the message from Pat.

At 11:00am, Terry calls and gets a message from Chris that was recorded at 9:00am. Terry thinks the system has delayed the message from Chris because Terry did not hear the system offer it when she checked messages at 10:00am.

What Terry should do is create a "dummy" subscriber to own the special transaction boxes. This "dummy" subscriber should not have a name that will conflict with or be confused with Terry's own name.

11. Subscriber waits too long to respond to a question, and his or her touchtone is taken as a response to the next question

At 10:00am, Terry Black calls the voice mail system and gets a message from Pat White. Terry listens to the message. When the system prompts "For no reply press 2, otherwise I'll record your message now" Terry pauses for a few moments trying to formulate a reply. Terry then decides not to reply and presses "2" for No. However, Terry presses "2" at the point when the system has stopped waiting for a response to that question and starts to prompt "Chris Colt left a message. Would you like to hear it?". Because Terry waited so long, the system interprets Terry's "2" as the response to the question about Chris Colt's message, and concludes that Terry does not want to hear Chris's message.

At 11:00am, Terry calls and gets a message from Chris that was recorded at 9:00am. Terry thinks the system has delayed the message from Chris because Terry did not hear the system offer it when she checked messages at 10:00am.

12. Subscriber confuses reviewing messages with checking new messages

The system will read a timestamp for an older message when it is being reviewed as well as when it is being read as a new message. A subscriber may review a two-day-old message and believe it is the first time he or she has heard the message.

On Monday, Terry Black is in a hurry, doing several things at once. Terry checks messages several times throughout the day, hearing them all as expected. On Tuesday, Terry spends some time reviewing old messages in the system. Terry hears a message that had been archived on Monday with the timestamp "Recorded yesterday at 9:30am" and doesn't recall ever hearing the message before because she was so busy on Monday. Terry forgets she is reviewing old messages, and believes that the message has been delayed for an entire day or more.
The following call report log file shows a subscriber reviewing old messages, rather than checking new messages.

```
05,"START CALL 90/09/11 16:02:07 type=0                                        "
05,"ID [889       ] tags [9 195 128] [9 195 128]                               "
05,"=889        OWNER call from [Black, Terry   ][9 195 128]                   "
1 -> 05,"=889        REVIEW OLD MESSAGES                                     "
05,"=889        Offered [Box of Black, T][5 0 0] TTDONE tt=[1]                "
05,"=889        Offered [Box of Black, T][5 0 0] TTDONE tt=[1]                "
05,"=889        Offered [Box of Black, T][5 0 0] TTDONE tt=[1]                "
2 -> 05,"=889        Offered [Box of Black, T][5 0 0] TTDONE tt=[1]                "
```

Notice in line 1 that the subscriber has chosen to review old messages. In line 2, the subscriber is offered and played a message that was recorded six hours previously. The message had already been listened to as new, in a prior call, and is now offered as an old message, but with a timestamp that is phrased just like a new message time stamp.

There are differences between the new and old message conversations, and subscribers can be trained to recognize the differences. Subscribers should be careful to remember which part of the voice mail conversation they are in when listening to messages.

## Resolving Delayed Lamps or Delayed Delivery

The following problems have been found to be causes of delayed delivery and delayed activation of message waiting lamps and other indicators. The causes of both problems are similar and often related.

### Changing Port Status Options

Problems with delayed lamps or delayed message delivery can often be resolved by allocating more ports to do dial-outs. You can assign a variety of port status codes to the ports on a system to provide the best balance of resources for both answering and dialing out calls. The port status codes are set on the EasyMade Application Screen, Page 2. These particular codes allow flexible assignment of ports for delivering messages and lighting message waiting lamps:

- **Ans** Answer only, no dial out. The port will not dial out to light message waiting lamps or deliver new messages.
- **A/D** Answer/Dial Out. The port will answer incoming calls. When it is not handling and incoming call, the port will dial out to light message waiting lamps and deliver new messages.
- **A/L** Answer/Light Lamps. The port will answer incoming calls. When it is not answering an incoming call, the port will dial out to light message waiting lamps. The port will **not** dial out to deliver messages.
- **A/M** Answer/Message Delivery. The port will answer incoming calls. When it is not answering an incoming call, the port will dial out to deliver messages. The port will **not** dial out to light message waiting lamps.
- **Dial** Dial Out only. The port is dedicated to dialing out to light message waiting lamps and to
deliver new messages. It will not answer incoming calls.

**LAMP** Light Lamps only. The port is dedicated to dialing out to light message waiting lamps only. The port will not dial out to deliver new messages and will not answer incoming calls.

**MSG** Message Delivery only. The port is dedicated to dialing out to deliver new messages only. The port will not dial out to light message waiting lamps and will not answer incoming calls.

* This port status code is available only with Replay Plus and with Repartee version 6.3 and higher.

On systems that handle a large volume of calls, adjusting the port status codes may not be enough. The system may require additional ports.

**Using Phone Trace, Level 2**

The phone trace can be enabled at a higher diagnostic level by changing the Startup Options line on the Application Setup Screen, Page 6 to read ^# T52 T71. This will enable all of the diagnostics described above, as well as providing detailed diagnostics about dial-out operations.

The following is a sample of the additional diagnostics provided with the level 2 phone trace active.

```
38,"DIALPREQ: 7 8 38 1 0 0 4 [26][Black, Terry][889]
36,"DIALDONE: 7 38 3 0 9 4 [26][Black, Terry][889]
04,"90/09/15","13:07:18", 7,"D","26 ","No conne","889 ","Black Te"
```

The first line, starting with DIALPREQ shows that a dial request has been entered for Terry Black, whose Personal ID is 889. The second line, starting with DIALDONE, shows that the dial-out was done for Terry. The third line is the normal call report log record for Terry's message delivery dial-out. Similar records are written to the call report log for message lamp and message delivery dial-outs.

Using these diagnostics, you may closely track the dial-out activity of any Repartee or Replay Plus system.

**13. The port configured for dial-outs is an Answer/Dial port, not a dedicated Dial port**

If the port that dials out for message deliveries is also used for answering calls, the port may be too busy answering calls to be able to promptly deliver messages. This problem is compounded if the calls being answered on the dial-out port are long, such as a call from a subscriber with many messages.

```
04,"START CALL 90/09/16 13:18:17 type=0 
1 -> 04,"ID [888 ] tags [9 28 128] [9 28 128] 
 4,"=888 OWNER call from [White, Pat ][9 28 128] 
04,"DIALPDEL: delete ID=888 , deleted 0 packets 
04,"Msg DEL [9 60 64][9 28 128][90/9/15][13:14:38] cc=0 
04,"Msg DEL [9 60 64][9 28 128][90/9/15][13:14:38] cc=0 
04,"Msg ADD [9 60 64][9 28 128][90/9/16][13:18:26] cc=0 
04,"Msg ADD [9 60 64][9 28 128][90/9/16][13:18:26] cc=0 
2 -> 03,"START CALL 90/09/16 13:18:38 type=0 
3 -> 03,"ID [12 ] tags [9 195 128] [5 0 0] 
03,"BOX call [Box of Black, T] xferflag=0 
03,"SAYVPS: cc=-31 tt=[*] on [178 5 131][119/168/41][89:1:149] 
03,"XFER cc=0 ext#=[12] xfered=0 stat=0 tt=[*] 
```
In the call report log file above, line 1 shows subscriber Pat White calling the system at 1:18pm on Port 4, which is the only dial-out port configured on this four-port system. A few seconds later (lines 2 & 3), a call comes in on Port 3 that is routed to Terry Black's message box. Line 4 shows the message for Terry being added, followed immediately by a DIAL REQuest for Terry (line 5). However, the dial-out does not occur until after Pat is finished with his call at 1:29pm, ten minutes later. Terry's message delivery has been delayed because the system's only dial-out port was busy handling a subscriber call.

Allocating more ports to dialing out can resolve this problem.

14. **One dial-out port is doing dial-outs for both message delivery and message waiting lamp activation**

A dial-out port which is used to deliver messages to subscribers will likely be tied up for lengthy periods by subscribers signing in, checking their messages, and leaving replies. Any dial-outs to activate message waiting lamps must wait for the dial-out port to become free before they can take place. This may result in lamps being lit long after a message is received.

Allocating more ports to dialing out can resolve this problem.

15. **The switch or voice mail configuration does not reliably activate message waiting indicators**

The voice mail system may send the switch the correct code to activate message waiting lamps, but the switch does not always light the lamps. Or, the way a subscriber's lamp code is defined on his or her subscriber page may be wrong.

Check the programming of the telephone switch. Check the lamp codes entered in the voice mail software on the subscriber's page of the Personal Directory and the EasyMade Switch Setup Screen, Page 2.

16. **The lamp retries value on the EasyMade Switch Setup Screen, Page 2 is set too low**

The voice mail system should be allowed to try activating a lamp several times. If the system fails to light a lamp on the first attempt, one or more subsequent attempts should be made. For example, many phone systems will not allow a lamp to be lit on a phone in use. If the first lamp activation attempt occurs while a subscriber is on the phone, and there are no further attempts,
the lamp will not be lit.

17. **There are not enough dial-out ports to handle the dial-out traffic**
A site may have more dial-out traffic than the ports assigned to perform dial-out can handle. A very busy voice mail system needing to light dozens of message waiting lamps and notify dozens of subscribers of their messages every hour will need ample dial-out port time. For example, to be able to place 100 calls per hour of at least one minute each to notify subscribers of messages, the system will need at least two dial-out ports.

18. **Message Delivery schedule is inadequate**
The system can be configured to call a subscriber at regular intervals to deliver new messages. The hours of the day, days of the week during which these calls are made, along with how frequently they are made, may all be programmed differently for each subscriber. If the dial-out schedule and frequency are configured improperly, there may be inadequate attempts made to notify a subscriber of his or her messages.

For example, Terry Black has set the voice mail system to call every 180 minutes between the hours of 11:00am and 4:00pm, Monday through Friday. A message is left for Terry at 1:30pm on Thursday. The system will call Terry immediately to notify her of the message. Terry is in a meeting and misses the call. The system waits another 180 minutes before making the next call. But, it is 4:30pm by then, and the system does not call Terry, as the delivery schedule ends at 4:00pm. The next day, Friday, the system calls Terry at 11:00am and at 2:00pm, but Terry is out of the office on business all day. The system must wait until Monday before it calls Terry again. If Terry answers the delivery call at 11:00am on Monday, the original message is already four days old.

Terry can reduce the interval between message delivery calls from 180 minutes to a smaller interval, like 30 minutes. Terry would then have been called five or six times Thursday afternoon instead of just once.

Terry could have the system call her at home in the evenings and on weekends. Terry could also extend the delivery schedule to earlier in the day if she comes to work before 11:00am. If Terry had set the system to wait for a certain amount of time before calling to deliver a new message, Terry might want to reduce or eliminate this initial delay setting in her message delivery schedule.

19. **Subscriber misunderstands Batch delivery method**
Even if a subscriber’s message delivery schedule is set properly, the **Batch** delivery method may contribute to the perception of message delay. **Batch** delivery is often misunderstood.

Suppose Terry Black has message delivery scheduled to occur every 60 minutes in Batch mode. At 10:00am the system calls Terry and delivers to her all her new messages. At 10:05am a new message is received for Terry. Since the system called Terry at 10:00am to deliver messages, it will not call Terry again for another 60 minutes. The system will wait until 11:00am before again calling Terry to deliver the message received at 10:05am. Terry may believe that the system has mistakenly delayed delivering the message, when in fact, Terry has instructed it to wait that long by using Batch delivery.

**Batch** delivery means that the system will **never** call a subscriber more often than the delivery interval specifies, even if new messages are received during that interval.

Terry should choose the **Each** delivery method if she wants to be called immediately upon receipt of every new message.
20. Defect in Repartee versions prior to 6.2 may prevent message waiting indicator activation and message delivery from being performed in a timely manner

Versions of Repartee prior to version 6.2 suffered from a software defect that prevented Repartee from dialing out properly. This problem affected both the lighting of message waiting indicators and Repartee’s ability to call a subscriber to notify him or her of new messages. Versions of Repartee 6.2 or later have been corrected. The defect accounted for a very limited number of lamp or delivery failures. Replay Plus never contained this defect.