

SECTION C: LOG ANALYSIS

This document will cover three tools you can use to examine your scheduled and edited log to review changes and detect potential problems.

History Snapshot

Helps you to see changes that were made to a log over time. This is a great way for managers or PDs to keep track of edits made by their staff. It can also help you see how your exported log compares to what actually happened on the air.

Check the Log

A tool you can use after you've edited the log to see if any of your song swaps, changes or deletions inadvertently caused rule violations elsewhere in the log. This is useful as an alternative to going back after you've finished editing and reviewing new rule violations one-by-one.

Recap Report

This is a report that's created at the end of each scheduling session. You can review it to see how your rules and goals are performing, and how far into your search depths MusicMaster had to dig to find a song. This information can help you determine if your rule settings need to be adjusted.

Part 1: History Snapshots

History Snapshot was introduced in Version 6 and improved in Version 7. It provides a visual way to see changes that were made in the log.

Tracking Edits

One good way to use History Snapshot is to keep track of edits that have been made to the log, particularly if you have other staff members working on it.

Traditionally, you might have done this by turning on the Schedule:Manual column in your Schedule Editor layout. You would see the letter "M" after any song that was edited manually - as long as it is still in the schedule. You can even see who made the change and when: (*Learn more using the Schedule: Manual column here:* <http://www.musicmaster.com/?p=1570>)

However, History Snapshot takes it a step further because you can see exactly what kinds of changes were made. There are icons to represent whether a song was deleted, added, swapped, or replaced. You can also see songs that had been dropped and are no longer visible in the schedule.

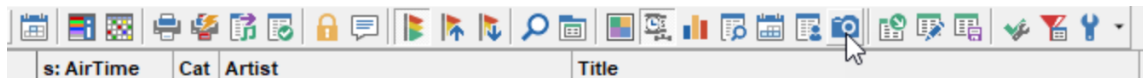
Reconciling Logs

Another use of History Snapshot is to see how your exported log compares to what was aired. Maybe the automation system dropped songs for time, or the air staff swapped a song for another. Traditionally, you can use Log Reconciliation in MusicMaster to get a text report that tells you what was changed. (*Learn more about log reconciliation here:* <http://www.musicmaster.com/?p=39>)

While this report gives you the information you need, History Snapshot provides a different, more visual way of looking at everything that was changed.

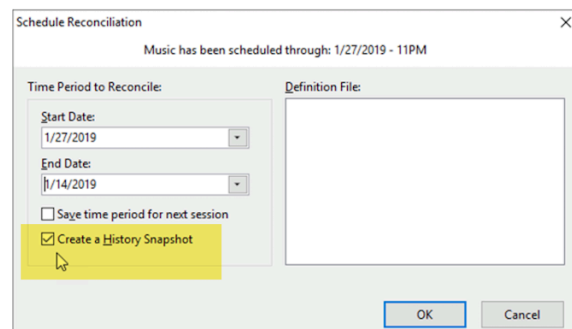
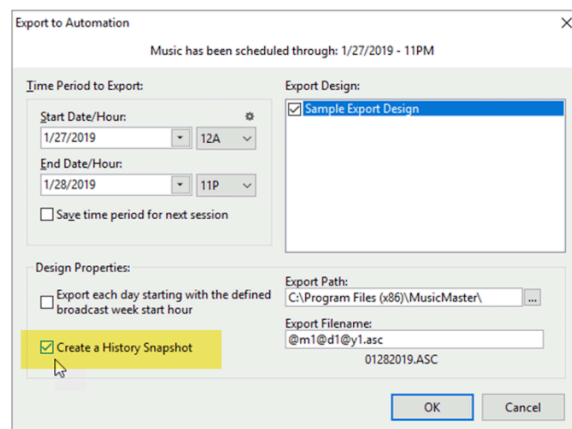
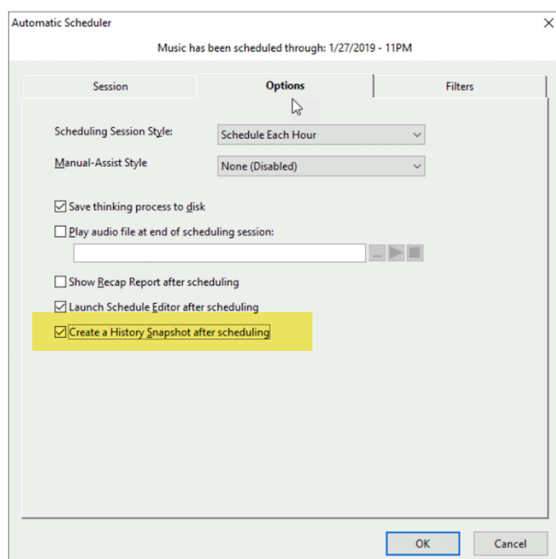
How to Take a History Snapshot

To take a snapshot at any time or compare snapshots, look for the camera icon in the Schedule Editor toolbar.



You can also set MusicMaster up to take a snapshot automatically after certain events, such as:

- After the Automatic Scheduler finishes (Version 6 and up)
- After the log is exported (Version 7)
- After you run log reconciliation (Version 7)

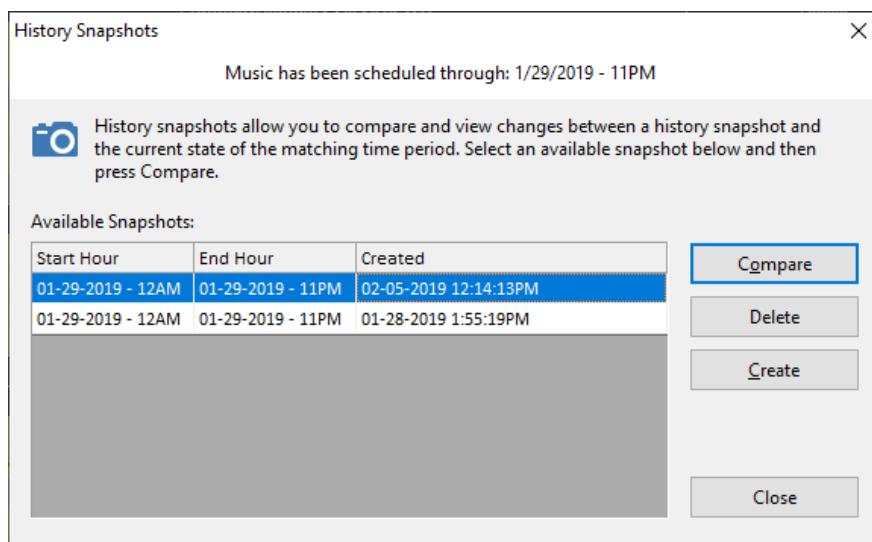


Comparing History Snapshots

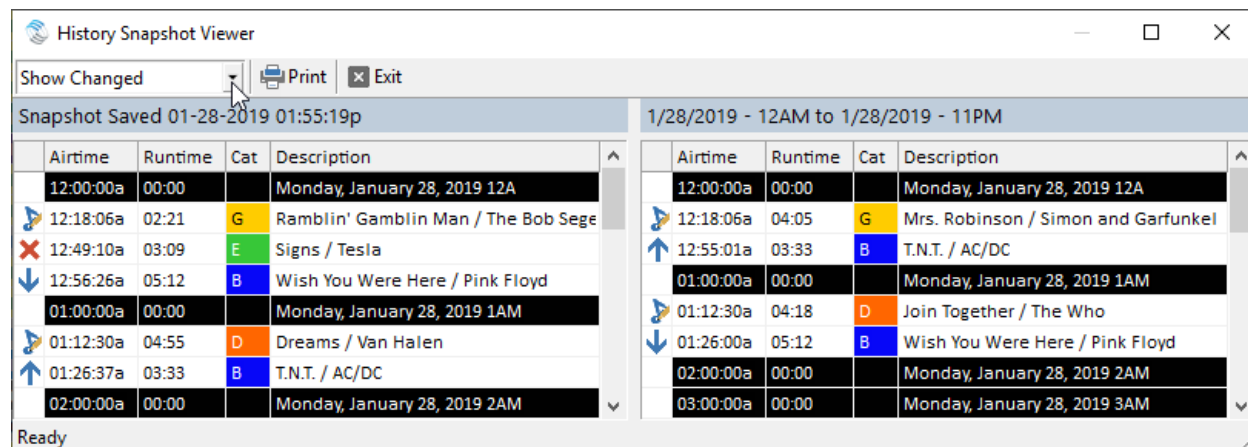
The History Snapshot takes a “before” image that you can then compare to another snapshot in time - after changes have been made, or the log has been reconciled. If songs have been moved, deleted, changed or dropped, you’ll be able to see exactly where those changes happened in a side-by-side comparison.

To capture a Snapshot, click on the camera icon and then click “Create”.

To compare a previous Snapshot to your current log’s state, click on the camera icon. You’ll see a list of all the snapshots that have been recorded. Select on the one you’d like to compare your current log to and click “Compare”.



When the History Snapshot Viewer opens, you’ll see the before and after snapshots are side-by-side, with the date and timestamp at the top. The default view shows your entire log. However, to get a better view of what has changed, you can use the dropdown box to select “Show Changed”. If you are using Version 7, you’ll be able to print any view as a report.



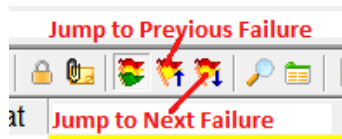
Part 2: Check the Log

What is Check the Log Used For?

After you're done editing and reviewing the log, you can use the Check the Log tool to go back and see if there are any rule violations you might have missed, or that were created as a result of your edits.

For example, if you've removed a couple of songs from your hour, you may have affected the time separation between keywords before and after that spot. Check the Log will show you where those violations are so you can decide if and how to fix them.

Traditionally, after editing, you may have decided to go back to the top of the log and use the "Jump to Next Failure" button to find any unbreakable rule violations left in the log.

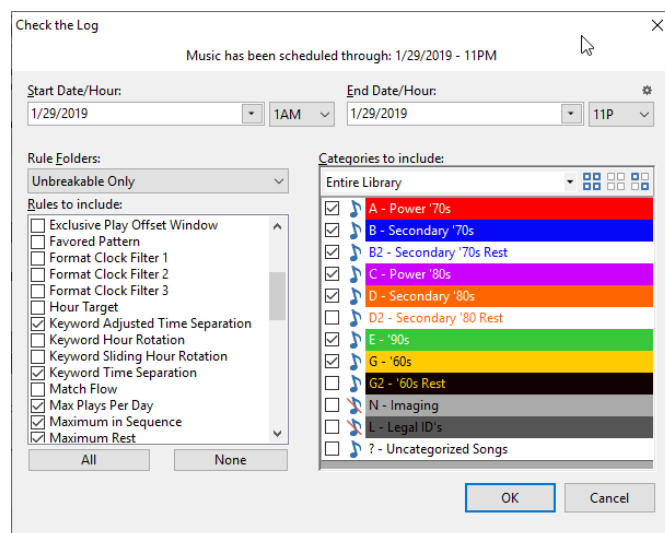


With Check the Log, you will get a report that shows you where all of these violations are. You can also tailor the report to only include certain categories, rules, or rule folders. For example, you may know that you break certain rules on purpose when editing, or have certain rules and categories for which you're less concerned about violations. By turning these items off, you won't see them in the Check the Log, and you can instead zero in on unexpected or more critical problems.

How to Use Check the Log

You can access Check the Log from either Dataset > Schedule > Check the Log or through its icon on the Schedule Calendar.

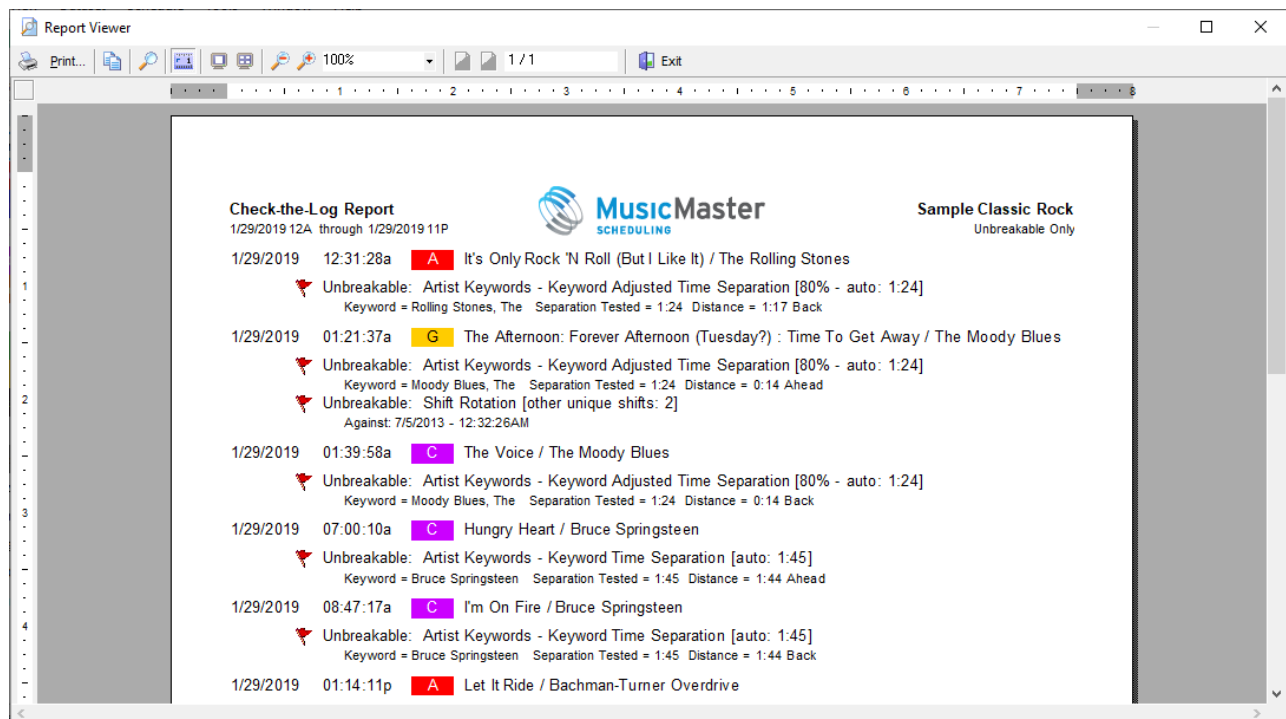
When the set-up box opens, you can choose from several options: including the date/time to check, as well as which categories should be checked, and which rules or rule folders to include.



Rule Folders allows you to determine which folders will be included in the Check. The Rules to Include option shows the list of all rules available in MusicMaster. Click the checkbox for those that you wish to recheck.

You only need to check on those rules that you want to be considered, not necessarily all the rules you currently have in your Rule Tree. For instance, you might be primarily concerned with daypart and artist separation violations, so you would only check off those two rules to make sure you don't have any violations there.

You can watch the progress of the report in the lower right corner. Once completed, you will either get a message indicating there are no violations or a report will display showing you the violations. This report will list the rules that were violated and what the current rule setting is.



Check-the-Log Report
1/29/2019 12A through 1/29/2019 11P

MusicMaster SCHEDULING

Sample Classic Rock
Unbreakable Only

Date	Time	Category	Artist	Violation Details
1/29/2019	12:31:28a	A	It's Only Rock 'N Roll (But I Like It) / The Rolling Stones	Unbreakable: Artist Keywords - Keyword Adjusted Time Separation [80% - auto: 1:24] Keyword = Rolling Stones, The Separation Tested = 1:24 Distance = 1:17 Back
1/29/2019	01:21:37a	G	The Afternoon: Forever Afternoon (Tuesday?) : Time To Get Away / The Moody Blues	Unbreakable: Artist Keywords - Keyword Adjusted Time Separation [80% - auto: 1:24] Keyword = Moody Blues, The Separation Tested = 1:24 Distance = 0:14 Ahead Unbreakable: Shift Rotation [other unique shifts: 2] Against: 7/5/2013 - 12:32:26AM
1/29/2019	01:39:58a	C	The Voice / The Moody Blues	Unbreakable: Artist Keywords - Keyword Adjusted Time Separation [80% - auto: 1:24] Keyword = Moody Blues, The Separation Tested = 1:24 Distance = 0:14 Back
1/29/2019	07:00:10a	C	Hungry Heart / Bruce Springsteen	Unbreakable: Artist Keywords - Keyword Time Separation [auto: 1:45] Keyword = Bruce Springsteen Separation Tested = 1:45 Distance = 1:44 Ahead
1/29/2019	08:47:17a	C	I'm On Fire / Bruce Springsteen	Unbreakable: Artist Keywords - Keyword Time Separation [auto: 1:45] Keyword = Bruce Springsteen Separation Tested = 1:45 Distance = 1:44 Back
1/29/2019	01:14:11p	A	Let It Ride / Bachman-Turner Overdrive	

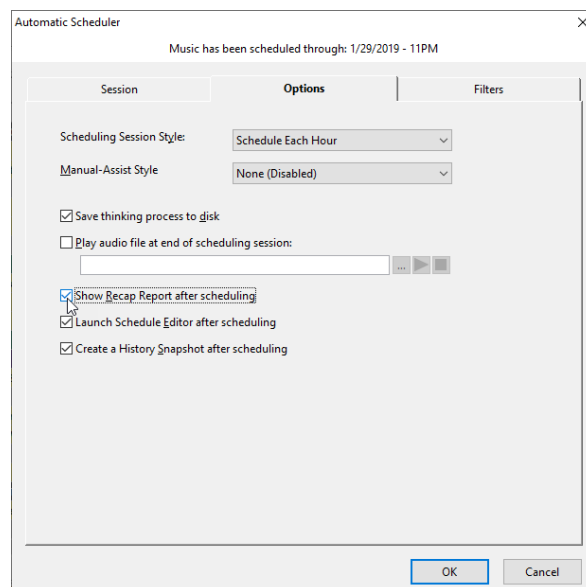
Part 3: Recap Report

The Recap Report is like a “report card” that you can use to examine a scheduling session and determine how the program performed in relation to the rules you’ve set up, as well as your Optimum Goals and category search depths.

For instance, you can see which unbreakable rules are causing Unscheduled positions in your log, as well as which breakable rules are being violated. If you find that your rules are failing more than you expect, it might indicate that you need to adjust those rules for better performance. You could use the Rule Wizard to see what MusicMaster’s recommended settings would be.

How to Run the Recap Report

You can access the Recap Report by going to the menu item Dataset > Schedule > Recap Report. You can also click a checkbox on the Automatic Scheduler to open the recap report after your scheduling session.



Reading the Recap Report

It’s important to note that the way you interpret the Recap Report is always based on how you’ve set up your individual categories, rules, Goals and more. This information can help you notice trends, but you have to take the entire picture into account.

Also note, you’ll get a better sense of these trends when you run a Recap Report on a scheduling session that spans a longer time frame, or compare multiple reports from a series of scheduling sessions.

Below is what the Scheduler Recap Report will look like. There are three main report sections you'll want to look at: Rule Stats, Goal Stats and Category Stats. We will talk about those three in the next section. There is also the Thinking Process, which displays MusicMaster's decision process when scheduling each position. It can show you why songs failed or a position was left unscheduled, and can be helpful in determining why some songs are not playing. We won't talk about the Thinking File here, but you can contact your MusicMaster Scheduling Consultant to learn more.

Scheduler Recap Report						
Rule Stats Goal Stats Category Stats Thinking Print Copy Exit						
Rule Folder	Rule Description	Category	Test Count	Pass Pct	Failed All	
Unbreakable	Dayparting	B - Secondary '70s	13831	100%	0	
Unbreakable	Format Clock Filter 1	B - Secondary '70s	13831	100%	0	
Unbreakable	Minimum Rest [1d 10:20]	B - Secondary '70s	7930	26%	0	
Unbreakable	Minimum Rest [1d 4:10]	B - Secondary '70s	2608	42%	0	
Breakable-1	Optimum Radial Spread	B - Secondary '70s	116	100%	0	
Breakable-1	Optimum Song Rest	B - Secondary '70s	116	100%	0	
Unbreakable	Shift Rotation [other unique shifts: 1]	B - Secondary '70s	3086	74%	0	
Breakable1	Shift Rotation [other unique shifts: 1]	B - Secondary '70s	840	100%	0	
Breakable2	Shift Rotation [other unique shifts: 2]	B - Secondary '70s	840	86%	0	
Breakable2	Shift Rotation [other unique shifts: 3]	B - Secondary '70s	1055	77%	0	
Unbreakable	Sliding Play Offset Window [plays: 1 - 4:00]	B - Secondary '70s	1111	91%	0	
Unbreakable	Song Kill Date	B - Secondary '70s	13831	100%	0	
Unbreakable	Song Kill Plays	B - Secondary '70s	13831	100%	0	
Unbreakable	Song Must-Fill Fields	B - Secondary '70s	13831	100%	0	
Unbreakable	Song Start Date	B - Secondary '70s	13831	100%	0	
Breakable1	Shift Rotation [other unique shifts: 2]	B - Secondary '70s	1279	82%	1	
Unbreakable	Artist Keywords - Keyword Adjusted Time Separation [80% - auto: 1:24]	C - Power '80s	2730	83%	0	
Unbreakable	Artist Keywords - Keyword Time Separation [auto: 1:45]	C - Power '80s	8736	75%	0	
Unbreakable	Core/Non Core C-Core Artist - Maximum in Sequence [4]	C - Power '80s	6600	100%	0	
Unbreakable	Core/Non Core N-Non-Core Artist - Maximum in Sequence [4]	C - Power '80s	2282	97%	0	
Breakable1	Day Offset Window [days: 1 - hours: 3]	C - Power '80s	564	100%	0	
Unbreakable	Dayparting	C - Power '80s	11466	100%	0	
Unbreakable	Format Clock Filter 1	C - Power '80s	11466	100%	0	
Unbreakable	Minimum Rest [14:00]	C - Power '80s	2236	64%	0	
Breakable1	Minimum Rest [16:00]	C - Power '80s	1051	88%	0	
Unbreakable	Minimum Rest [18:00]	C - Power '80s	6600	55%	0	
Breakable1	Minimum Rest [18:00]	C - Power '80s	564	100%	0	
Breakable-1	Optimum Song Rest	C - Power '80s	82	100%	0	
Unbreakable	Shift Rotation [other unique shifts: 1]	C - Power '80s	3127	74%	0	

1. Rule Stats

The first report you see gives you detailed information on each rule that was tested by the Automatic Scheduler, sorted by Category.

Rule Folder and Rule Description give you details on what the rule is, and whether it is Unbreakable or Breakable. Each rule line will be yellow if the rule is Breakable, and red if it's Unbreakable.

Test Count indicates how many times the rule was tested during the scheduling run. For categories with smaller depths and fewer positions, that number will be much smaller. Also, later-testing rules will likely have lower Test Counts since each rule filters out songs that violate it.

Pass Pct is a percentage that can indicate how difficult a rule is. The higher the number, the easier it is for MusicMaster to schedule based on that rule. Lower percentages can be an indication that the rules may be too difficult. By default, MusicMaster will list any Pass Pct of 50% or lower in red. You can change that in Tools/Options/Additional Properties, then under the Schedule header find RecapMinPerformance and adjust it accordingly.

Failed All has different meanings if the rule is Unbreakable or Breakable. For Unbreakable Rules, it shows the number of positions in the schedule where this Unbreakable rule caused an Unscheduled position, because all available songs failed to pass the rule. For Breakable Rules, this number indicates the number of songs that were scheduled, despite not passing that Breakable Rule.

Interpreting Rule Stats

It may be the case that you have certain rules that you *expect* will have a higher than average Pass Pct or Failed All value. In addition, if you are using Migrating or Combo clock elements, it's possible to have a Fail All number but no Unscheduled positions. This is because Migrating and Combo elements allow for other categories to be tested in that position.

However, when interpreting the Recap Report, you might spot *unexpected* results. Overly strict rules that are causing too many Unscheduled Positions, or less important breakable rules that are failing often.

Making adjustments to those rules can speed up your scheduling and editing time and give MusicMaster a wider range of song options to choose from.

2. Goal Stats

This report is generated whenever you use Optimum Goal Scheduling. Optimum Goals are used to “break ties” between passing songs, so instead of just scheduling the next passing song in the stack, you get the *best* song in your search depth that meets these ideal expectations.

In the Goal Stats report, you'll see one entry for each category where the Goal is used. In the image below, the first goal on the list is Optimum Song Rest for Category A. Of the 166 times a scheduled position was tested against this goal, the Minimum Value score was 83%.

In order to explain this number, let's look at how the Optimum Song Rest goal is scored. First, MusicMaster calculates the ideal turnover for a song in that category. If that ideal turnover 10 minutes and the song in question has rested 5 minutes, it would get a score of 50%. The higher the percentage, the closer that song's rest is to the ideal. If it's above 100%, it rested longer than the ideal turnover.

Scheduler Recap Report					
⚡ Rule Stats 🎯 Goal Stats 🎵 Category Stats 🧠 Thinking 🖨️ Print 📄 Copy ✖ Exit					
Category	Scheduling Goal	Scheduled	Min Value	Avg Value	Max Value
A - Power '70s	Optimum Song Rest	166	83%	107%	228%
B - Secondary '70s	Optimum Radial Spread	116	100%	103%	200%
B - Secondary '70s	Optimum Song Rest	116	81%	545%	8730%
C - Power '80s	Optimum Song Rest	82	65%	930%	13303%
D - Secondary '80s	Optimum Radial Spread	71	100%	100%	100%
D - Secondary '80s	Optimum Song Rest	71	61%	7352%	68729%
E - '90s	Optimum Radial Spread	42	100%	100%	100%
E - '90s	Optimum Song Rest	42	60%	21891%	45443%
G - '60s	Optimum Radial Spread	47	100%	100%	100%
G - '60s	Optimum Song Rest	47	56%	1762%	6667%
Ready					

In the example above, the Minimum Value was 83%. So that means the worst scoring song had only reached 83% of the ideal turnover time.

The Average Value is 107%, which means that on average, not only did the song rest for at least the ideal time, it slightly exceeded the ideal. In fact, the Maximum Value shows that at one point, a song had rested for 228% of the ideal time. Or in other words, twice the ideal time, and then some.

The math works differently for each of the Goals. In fact, because of that, you may have Goals that never reach 100%! So we recommend you don't worry too much about the numbers here. Just look at the Goal Stats as a way to see that your Goals are in fact doing their job - and in many cases, giving you better than ideal results!

However, if you are interested in learning more about the math behind each Optimum Goal, you should read about them in the MusicMaster Help, or check out this blog article: <http://www.musicmaster.com/?p=1587>. You can also contact your MusicMaster Scheduling Consultant for guidance.

3. Category Stats

This report gives you information on how far into the search depth the scheduler had to go to find the songs it scheduled. It also will give you the number of unscheduled positions at the time the category was scheduled.

This is an important clarification since depending upon your clock construction, the number of unscheduled positions listed may not necessarily reflect the final result. For instance, if you use Migrating positions, categories may be considered but not filled due to rules. Other categories may then fill these positions as the scheduler continues.

Category	Scheduled	Min Depth	Avg Depth	Max Depth	Unscheduled
A - SPOTLIGHT	24	100%	100%	100%	
B - 2000s	21	50%	54%	100%	
C - 1990s	112	3%	25%	68%	8
D - 1980s	70	3%	18%	90%	26
E - 1970s	19	5%	37%	100%	6
F - 1960s	17	8%	46%	100%	3
I - INSTRUMENTALS	10	3%	9%	18%	3
X - CHRISTMAS					
L - Liners	24	100%	100%	100%	
J - Jingles	24	100%	100%	100%	
Z - NEW SONGS					

Ready

In the above example, you can see that when in the 70 positions scheduled from Category “1990s”, MusicMaster had to dig on average 25% of the way through the Search Depth to find an acceptable song. The most it ever had to dig was 68%, and the least it had to dig was 3%.

Interpreting Category Stats

The report is just a way of seeing if what you expect to happen is actually happening. For instance, you may have some categories where you need really restrictive rules, and MusicMaster must dig all the way through your search depth to find a song that works. But on other looser categories, you wouldn’t expect MusicMaster to have to work that hard - or result in Unscheduled positions. If you find that is the case, you might want to relax some of the rule settings for that category so MusicMaster has an easier time finding a song.

It’s also important to note that if you’re using **Optimum Goals** on a category, MusicMaster will *a/ways* dig through the full search depth. Remember, it does this because it’s trying to find the best song for that position, not just the first available passing song.

You might also be using **Virtual Search Depths**, which is recommended on any category, other than those tight priority categories for which you generally play the next song in the stack (and your search depth is one).

With Virtual Search Depth, MusicMaster calculates and adjusts the Search Depth dynamically, based on how difficult it is to find a song for each position. This means that MusicMaster may not have to search as deeply for some positions, resulting in a log that schedules much more quickly while still getting the results you expect. (*Learn more about Virtual Search Depth here:* <http://www.musicmaster.com/?p=7326>)