Understanding How Multi-row Forecast Overrides are Allocated

Working with Hierarchies · https://dev.forecastpro.com/documentation/forecast-pro-trac/working-with-hierarchies/understanding-how-forecast-overrides-are-allocated/

The multi-row override facility in Forecast Pro allows you to directly adjust your forecasts at any level of the hierarchy. Changes made at any level of the forecasting hierarchy will automatically reconcile all levels. This chapter was written to clarify exactly how the multi-row mode reconciliation is performed and document cases where adjustments cannot be fully implemented due to conflicting overrides or program settings.

The examples in this chapter assume that you are making adjustments to the statistical forecasts, however, if you have defined alternative baseline forecasts or generated an inherited forecast row, the overrides will be made to these forecasts using the same logic.

Adjustments Made to a Single Level

In this section we will describe how Forecast Pro reconciles the forecast hierarchy when overrides are made to a single level of the hierarchy.

Important: *If you restrict your overrides to a single level of the hierarchy, the reconciliation process is simple and intuitive. We strongly urge you to limit your overrides to a single level if at all possible.*

Figure 1 below depicts a simple forecast hierarchy prior to any overrides being entered. Notice that at this point the Statistical forecasts equal the committed Forecasts.

		Total S = 5 F = 5	

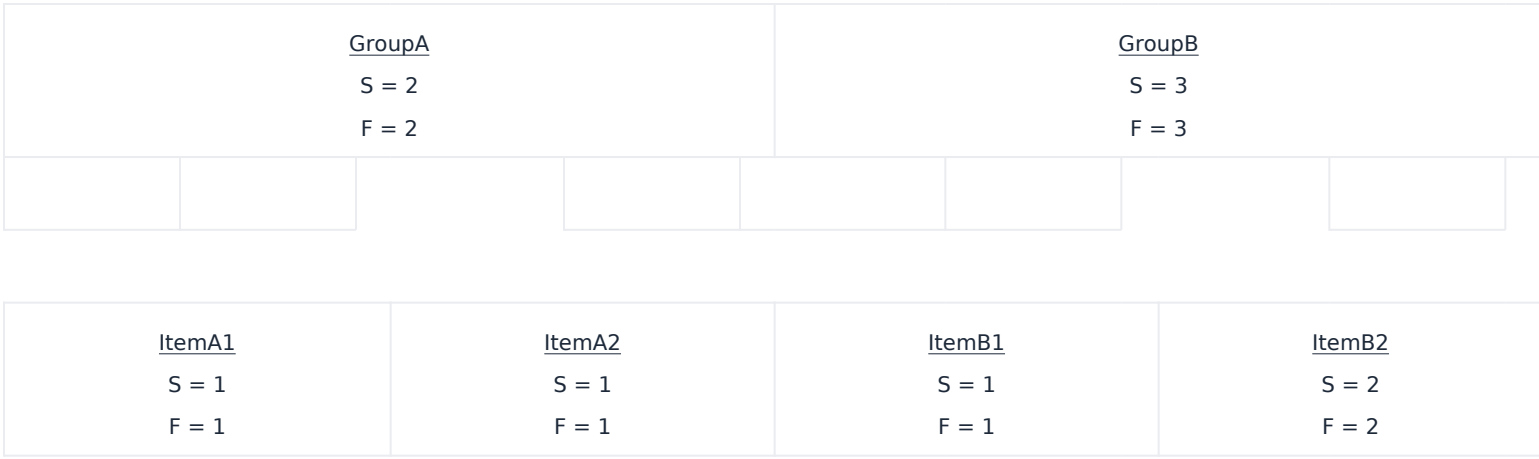


Figure 1

Let’s now modify the above hierarchy by overriding the forecast for ItemA1 to equal 75. This results in the hierarchy shown in Figure 2 below.

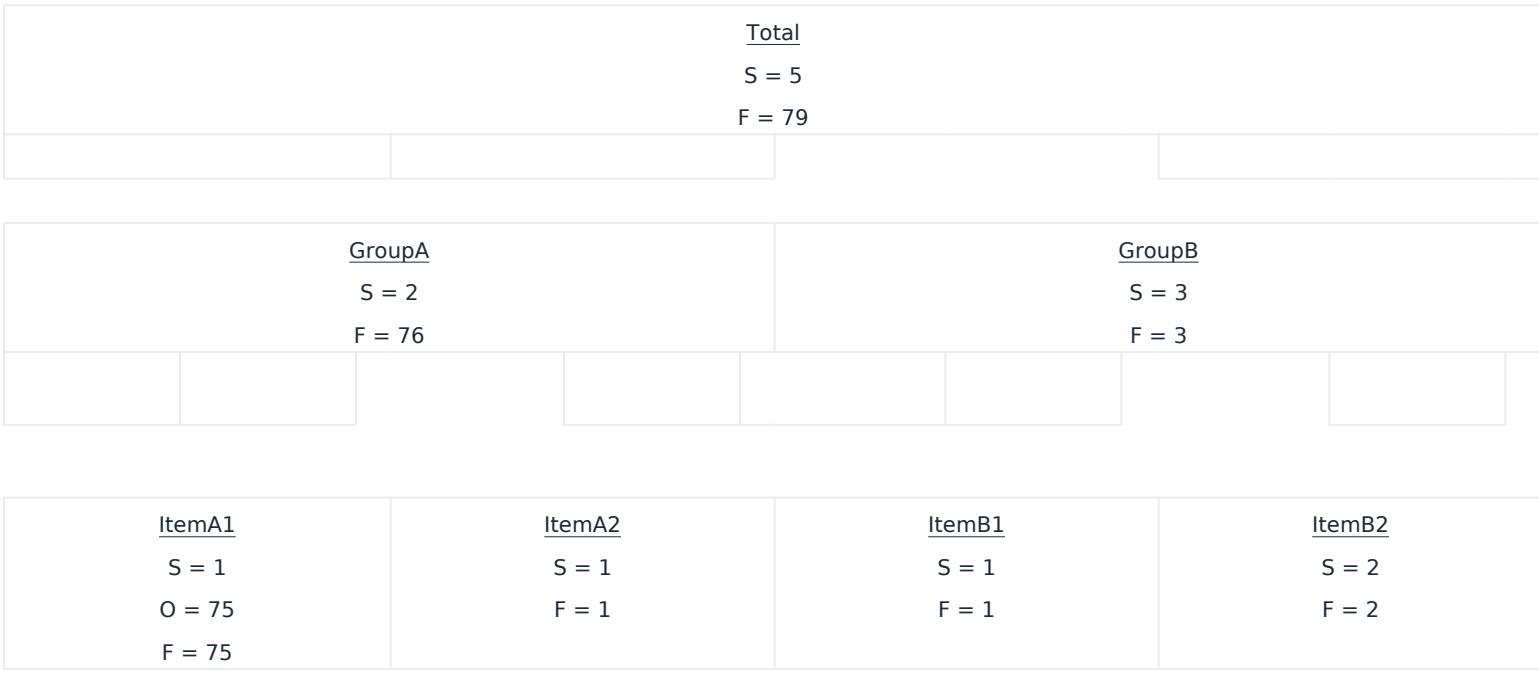


Figure 2

Notice that at this point the committed Forecasts for GroupA and Total do not equal the Statistical forecasts.

If we had started with the hierarchy depicted in Figure 1 and adjusted the GroupB forecast to 75 (rather than ItemA1) we would generate Figure 3.

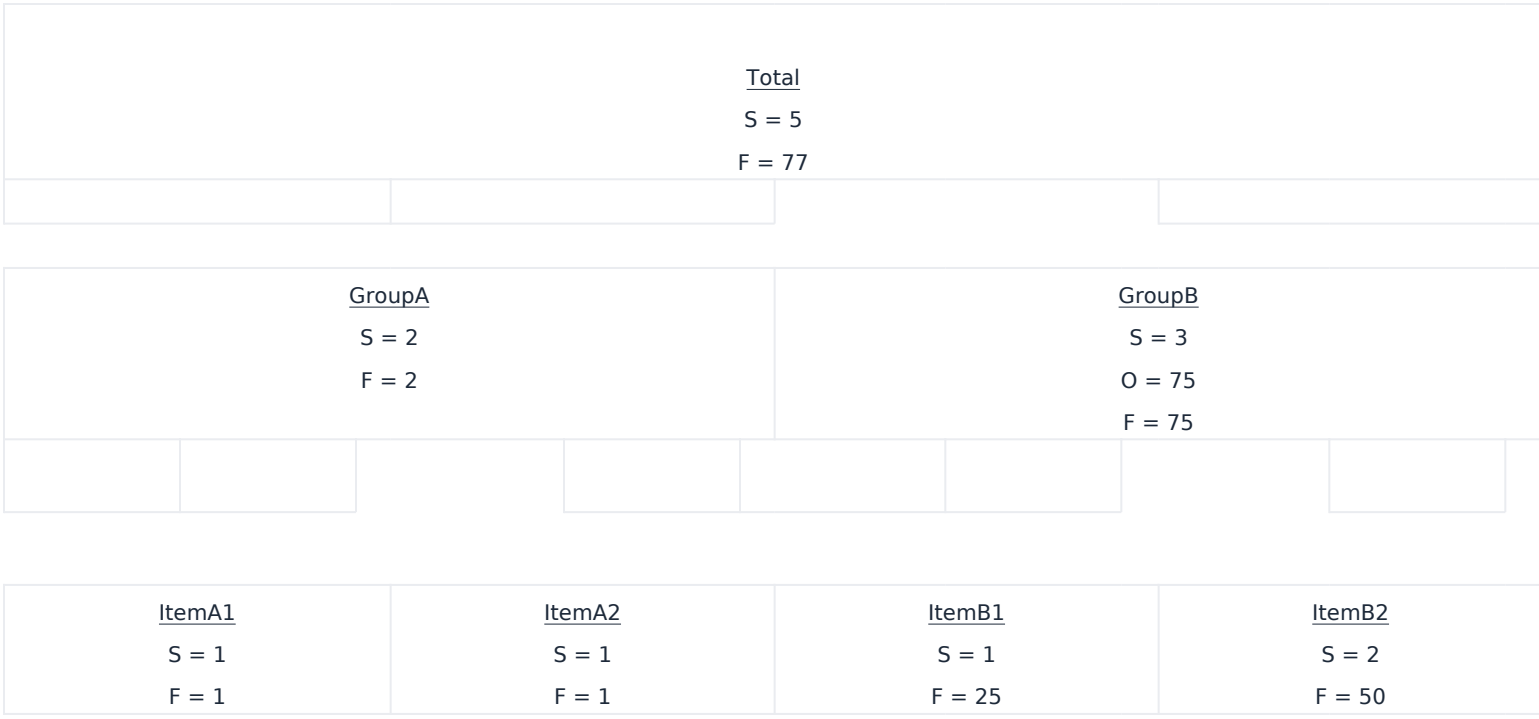


Figure 3

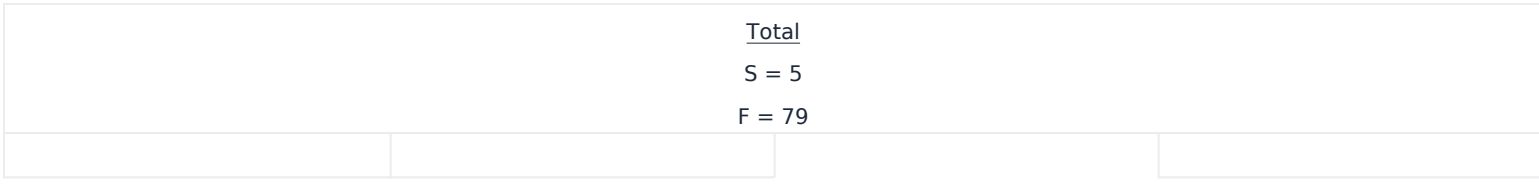
Notice that the committed Forecasts for ItemB1, ItemB2 and Total do not equal the Statistical forecasts. Notice also that Forecast Pro allocated the GroupB override to ItemB1 and ItemB2 based on the proportions established by their Statistical forecasts.

Adjustments Made to More Than One Level

In this section we will describe how Forecast Pro reconciles the forecast hierarchy when overrides are made to more than one level of the hierarchy.

Important: *There are many ways that this type of reconciliation could be performed—each one leading to different forecasts. If you plan to make overrides at more than one level of the hierarchy, it is essential that you understand how Forecast Pro performs the reconciliation.*

Figure 4 below depicts a forecast hierarchy where ItemA1 has been overridden to equal 75. (It is identical to Figure 2.)



GroupA	GroupB
S = 2	S = 3
F = 76	F = 3

ItemA1	ItemA2	ItemB1	ItemB2
S = 1	S = 1	S = 1	S = 2
O = 75	F = 1	F = 1	F = 2
F = 75			

Figure 4

Let’s now modify the above hierarchy by overriding the forecast for Total to equal 475. This results in the hierarchy shown in Figure 5 below.

Total
S=5
O = 475
F = 475
Locked=75
Unlocked=400

GroupA	GroupB
S=2	S=3
Unlocked S=1	Unlocked S=3
Unlocked Allocation from Total=100	Unlocked Allocation from Total=300
Locked=75	Locked=0
F = 175	F = 300
Unlocked=100	Unlocked=300

ItemA1	ItemA2	ItemB1	ItemB2
S=1	S=1	S=1	S=2
O = 75	Unlocked S=1	Unlocked S=1	Unlocked S=2
F = 75	F = 100	F = 100	F = 200

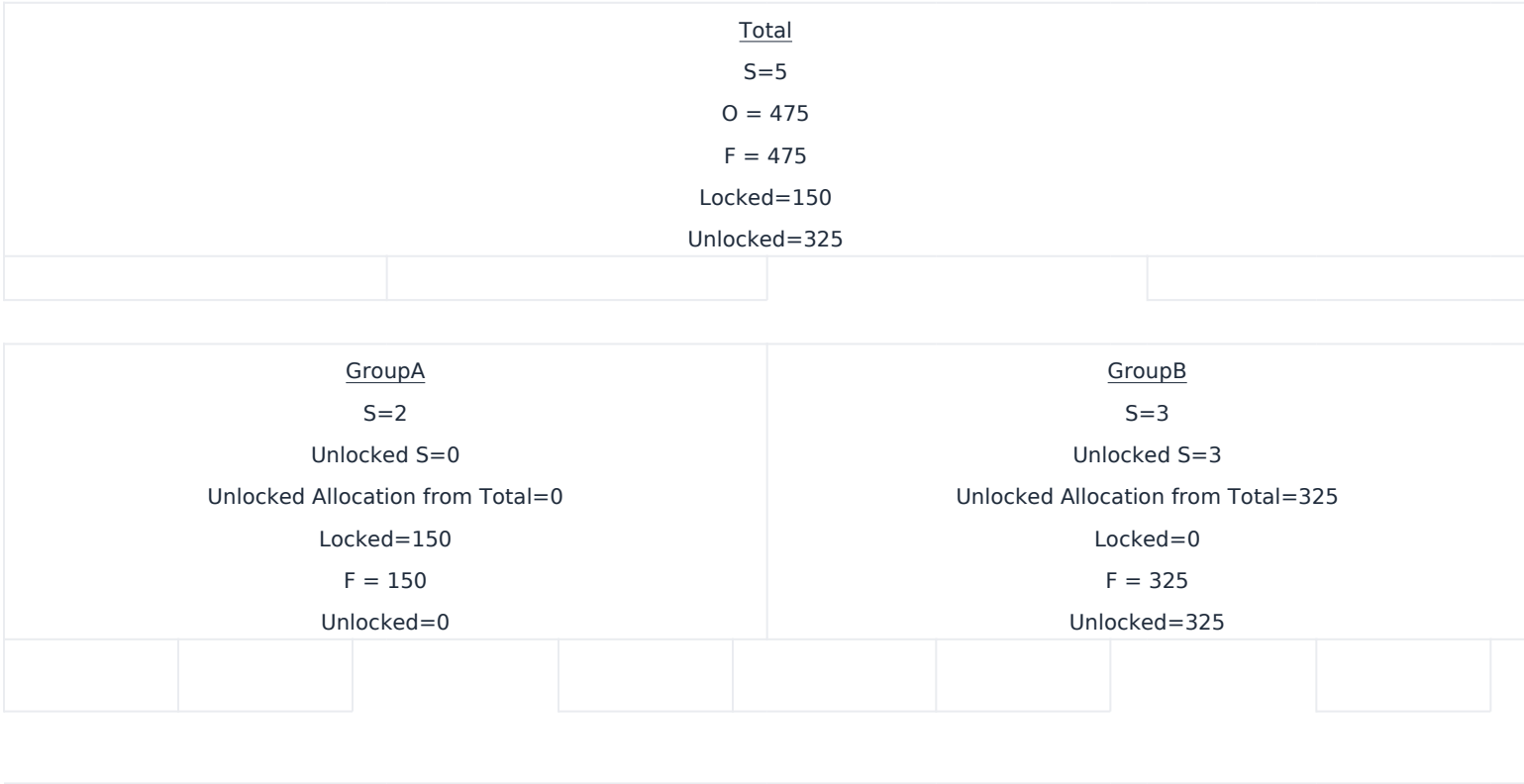
Figure 5

Making adjustments at more than one level introduces the concept of *locked* and *unlocked* volume and forecasts at multiple levels of the hierarchy. Proportional allocations of unlocked volume are made using unlocked forecasts.

Notice that:

1. When we adjusted Total to 475, 75 units were locked due to the override on ItemA1 and 400 units were unlocked and needed to be allocated downward.
2. Forecast Pro used the *Unlocked* statistical forecasts for GroupA and GroupB to determine the allocation proportions for the 400 unlocked units from Total.
3. Forecast Pro did not alter the committed Forecast value for ItemA1 because it had been explicitly overridden (i.e., it was locked). Therefore, the 100 units of unlocked volume from GroupA was allocated exclusively to ItemA2 (the only unlocked item in GroupA).
4. Forecast Pro used the *Unlocked* statistical forecasts for ItemB1 and ItemB2 to determine the allocation proportions for the 300 unlocked units from GroupB.

Let’s now modify the above hierarchy by overriding the forecast for Item A2 to equal 75. This results in the hierarchy shown in Figure 6 below.



ItemA1	ItemA2	ItemB1	ItemB2
S=1	S=1	S=1	S=2
O = 75	O = 75	Unlocked S=1	Unlocked S=2
F = 75	F = 75	F = 108.33	F = 216.67

Figure 6

Notice that GroupA has no unlocked volume so the 325 units of unlocked volume from Total are allocated exclusively to GroupB.

Examples Where Overrides Cannot be Allocated

If you make forecast overrides to more than one level of the hierarchy, you can generate situations where the overrides cannot be allocated. In these instances, you will get an error message and the override may not applied.

Figure 7 below depicts a forecast hierarchy where ItemA1 and ItemA2 have both been overridden to equal 75 and ItemB1 has been overridden to equal 150.

Total
S = 5
F = 302

GroupA	GroupB
S = 2	S = 3
F = 150	F = 152

ItemA1	ItemA2	ItemB1	ItemB2
S = 1	S = 1	S = 1	S = 2
O = 75	O = 75	O = 150	F = 2
F = 75	F = 75	F = 150	

Figure 7

Suppose you try to override the forecast for GroupA to equal 100. The override could not be applied because both ItemA1 and ItemA2 are “locked”. Forecast Pro will display an error message and reject the override.

Let’s now modify the above hierarchy by overriding the forecast for GroupB to equal 50. This results in the hierarchy shown in Figure 8 below.

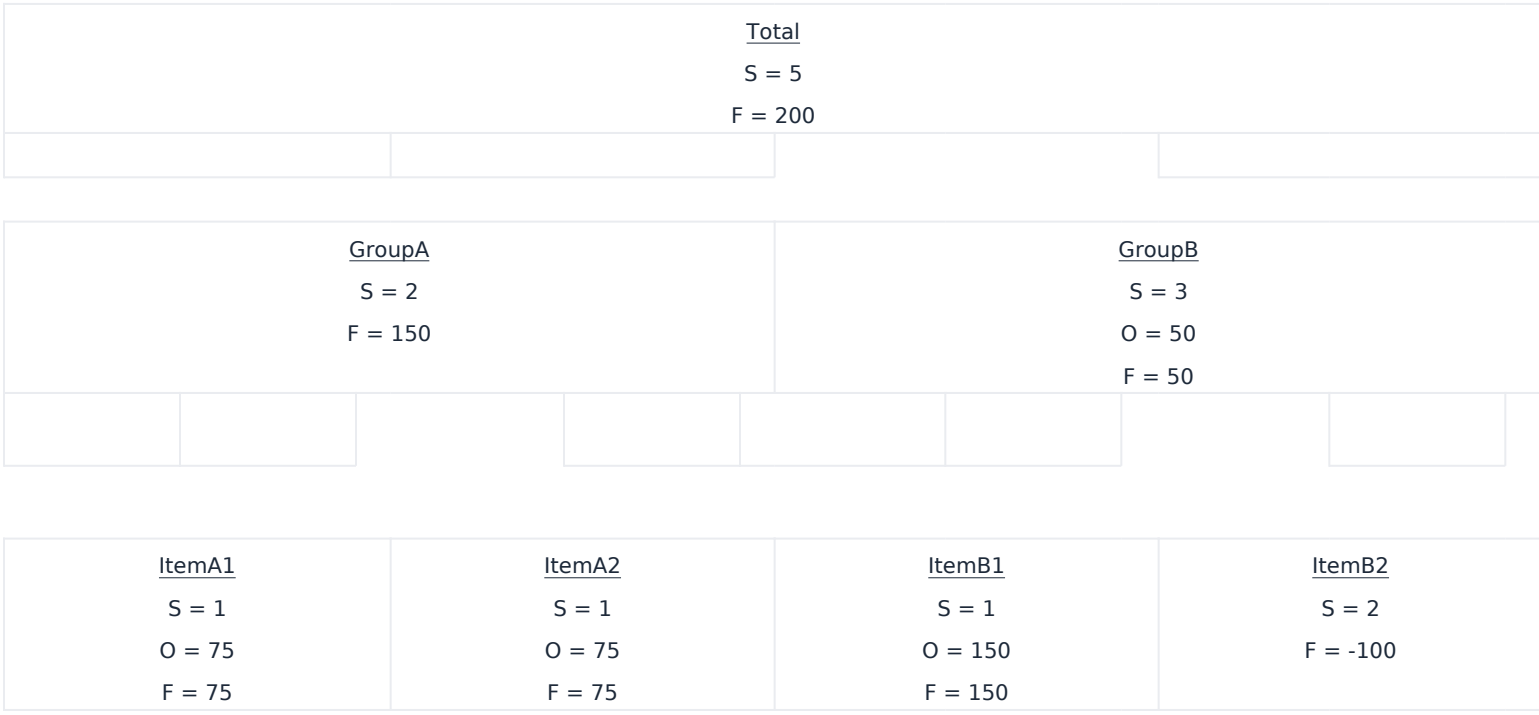


Figure 8

Notice that the override for GroupB resulted in a negative committed Forecast for ItemB2. This result assumes that the “Allow Negative Forecasts” setting in the Forecast Pro Options dialog box was selected. If this setting was not selected, the override could not be made and Forecast Pro would display an error message and reject the override.

When reading in overrides from a simple flat file, the overrides in the file will be applied, and any existing conflicting overrides in the project will be removed. If you are using an Excel Collaboration file, you will be presented with a choice of which override(s) to maintain and which to remove.

Summation

It should be quite apparent that if you make adjustments to more than one level of a hierarchy the reconciliation becomes quite complex. Although several of the examples presented seemed involved, these examples had simple hierarchies consisting of only 3 levels and 4 end-items. Most users of Forecast Pro are working with thousands of items and much more complex hierarchies.

Virtually all of the complexity disappears if you restrict yourself to making forecast adjustments to a single level of the hierarchy. Although we've stated this previously, it's worth repeating:

If you restrict your overrides to a single level of the hierarchy, the reconciliation process is simple and intuitive. We strongly urge you to limit your overrides to a single level if at all possible