# Negative Float and the Critical Path

Negative float is always caused by imposed dates (constraints).

Negative float occurs when the late finish time (LFT) for an activity determined by counting back from the imposed date, is earlier than the early finish time (EFT) determined by counting forward from the project start, time now, or another imposed constraint. Negative float can be very useful in identifying the degree of challenge faced by a project in meeting its contractual, or other obligations, represented by the constrained date placed on an activity or milestone.
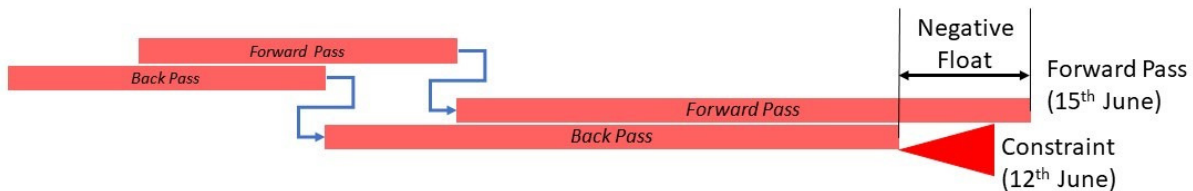
For example, if the earliest an activity can finish is the 15th of June (based on its preceding logic), but the latest it can finish is the 12th June (based on a constraint), the total float calculation will show: 12 -15 = **-3**.

While Total Float calculations may show negative float, Free Float calculations cannot be negative[1].

Note: The effect of multiple calendars described in *Calendars and the Critical Path[2]* can affect Total Float calculations with negative results in the same way as they affect normal positive float calculations.

Constraint types that may cause negative float.

Start-No-Later-Than

Start-no-later-than sets the latest possible start date for an activity. If the network logic dictates the activity should start after this date, the imposed date overrides the time analysis calculations, fixes the start date, and generates negative float. The activity may start earlier if logic allows.

Finish-No-Later-Than

Finish-no-later-than sets the latest possible finish date for an activity. If the network logic dictates the activity should finish after this date, the imposed date overrides the time analysis calculations, fixes the end date, and generates negative float. The activity may start earlier if logic allows.

Mandatory-Start

Mandatory-start fixes the start date of an activity. The activity must start on this date regardless of the network logic. If the network logic dictates the activity should start after this date, the imposed date overrides the time analysis calculations, fixes the start date, and generates negative float. Use of this constraint is not recommended.

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1   For more on *Float Calculations*, see:
     https://mosaicprojects.com.au/Mag_Articles/G001_Calculating_and_Using_Float.pdf

2   See *Calendars and the Critical Path*:
     https://mosaicprojects.com.au/Mag_Articles/AA042_Calendars_+_the_Critical_Path.pdf

Mandatory-Finish

Mandatory-finish fixes the finish date of an activity. The activity must finish on this date regardless of the network logic. If the network logic dictates the activity should finish after this date, the imposed date overrides the time analysis calculations, fixes the end date, and generates negative float. Use of this constraint is not recommended.

This paper is an augmented extract from *Easy CPM*, Section 4:

Preview *Easy CPM* at: https://mosaicprojects.com.au/shop-easy-cpm.php

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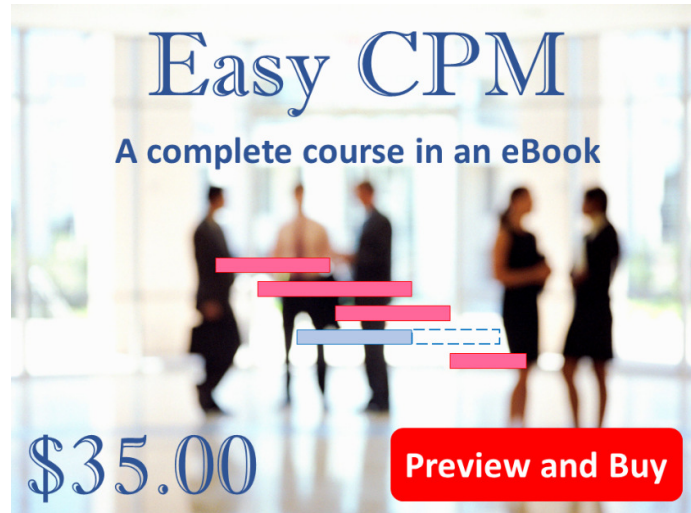
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