

## A DISCUSSION OF "MAX. LEVELS"

We occasionally receive calls dealing with the amount of time it takes to Build/Refresh X-ref to execute, or the amount of disk space used. Often, customers asking questions in these areas have the "Max. levels" build value set inappropriately. The value entered for the "Max. levels" build value (see Build Values options on Setup Menu {HAWKSETUP}) affects both the amount of time and disk space required to Build/Refresh Object X-ref. Whether you build Object X-ref using the "Library" or "Application" method (See Advanced Topics on Overview Menu {HAWKOVER}), careful consideration should be given before modifying this build value from a blank, its shipped default.

When building X-ref by library(s), a blank specified for "Max. levels" causes PATHFINDER to build X-ref at a single level. In a single level build, PATHFINDER documents individual programs, not jobstreams. Using this method, when option "5. Job Explosion" is requested, PATHFINDER will reconstruct jobstreams from individual program explosions. Building X-ref at a single level is the fastest and most disk space efficient method for creating Object X-ref. However, single level builds do not apply changes such as overrides or library list manipulations which might affect the objects a program uses. To get these changes applied to X-ref when building by library, modify the "Max. levels" build value to reflect the maximum number of levels PATHFINDER should attempt to document. However, specifying a "Max. levels" value greater than blank will cause an increase in the amount of time and disk space required to build X-ref. This increase is caused by a program being exploded more than once. This "redundant program explosion" occurs whenever the same program is called from more than one jobstream, and each of those jobstreams is being documented.

When using the "Application" method for building Object X-ref, PATHFINDER creates X-ref by looking at entire jobstreams, rather than individual programs. Using this method, changes such as overrides and library list manipulations encountered within a jobstream are automatically included in X-ref data. When using the "Application" method, a value of blank for "Max. levels" will cause BLDOBJ to follow jobstreams until they have completed. Specifying a "Max. level" value other than blank will cause BLDOBJ to document the jobstream up to the number of invocation levels specified. With the "Application" method of building, "redundant program explosions" can also occur increasing the amount of time and disk space required to build X-ref. However, if a \*CALLING list (see \*CALLING List options on Setup Menu {HAWKSETUP}) is used for the build, add these redundantly called programs to the list and this ensures they are exploded only once.

For further information, please contact our Technical Services department. We can be reached by email at [info.hawkinfo.com](mailto:info.hawkinfo.com) or call us Monday-Thursday, 7 a.m. to 5 p.m. (MST) and Friday 7 a.m. to 3 p.m., VOICE (970) 498-9000 or FAX (970) 498-9096.