**NOTE:** This Technical Note has been underline retired. Please see the Technical Notes page for current documentation.

# Technical Note ME02
## Handles VS Pointers - Identity Crisis

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A handle is a handle and a pointer is a pointer. Applications should avoid embedding non-relocatable objects (that the system assumes will never move) in handles.

**[Sep 01 1987]**

## Introduction

In order to avoid fragmentation, some applications embed pointers (non-relocatable memory manager objects) in handles, so that the handles can be moved around as needed. This can cause several problems, especially with the Macintosh II, and should be avoided.

For example, use of a handle to store a `GrafPort` can be particularly dangerous. A `GrafPort` must not move between the time that it is opened (`OpenPort`, `NewWindow`, `NewDialog`, etc.) and the time that it is closed (`ClosePort`, `DisposeWindow`, `DisposDialog`, etc.). Color QuickDraw keeps a list of open ports and **pointers** to them, so, if you create a `GrafPort` and it moves while still open, Color QuickDraw will (unknowingly) have a pointer to outer space instead of a pointer to a `GrafPort`. When it needs to use that pointer, it will get hopelessly confused and probably issue a system error to let you know.

As an aside, if you open a port by calling `OpenPort` or `OpenCPort,` you should always close the port by calling `ClosePort` or `CloseCPort` before calling `DisposPtr` on the port or you will orphan handles (`visRgn`, `clipRgn` and more).

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## References

QuickDraw

The Memory Manager

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