

Technical Note TE08

Safe cdevs

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This Technical Note describes a potential problem with Control Panel devices (cdevs) that contain `EditText` fields and presents a way to avoid it.

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Introduction

The Control Panel chapter in *Inside Macintosh*, Volume 5 describes, in detail, how run-time errors are handled by the Control Panel and a cdev. There is, however, a potential problem with cdevs that contain `EditText` items that this chapter does not cover.

When a cdev is called by the Control Panel, the cdev's 'DITL' resource is concatenated to the Control Panel's 'DITL'. The Control Panel then lets the Dialog Manager update the window. If the cdev contains an item of type `EditText`, the Dialog Manager allocates and activates a `TEHandle` to be used for displaying and editing text. All of this action happens before the cdev gets the `initDev` message from the Control Panel.

As detailed in The Control Panel chapter, if an error occurs from which a cdev cannot recover, the cdev should dispose of any private memory and return the appropriate error code or a `NIL` value to the Control Panel. The Control Panel then grays out the cdev's area, displays the appropriate error dialog, and then deletes the items that were added to its 'DITL'.

All of this is fine, except that the `TEHandle` does not get deallocated. The `EditText` items get thrown away, including the strings in the item list that the Dialog Manager would use to store text entered into the `EditText` field, but the `TEHandle` stays there and stays active. Figure 1 illustrates what this would look like.

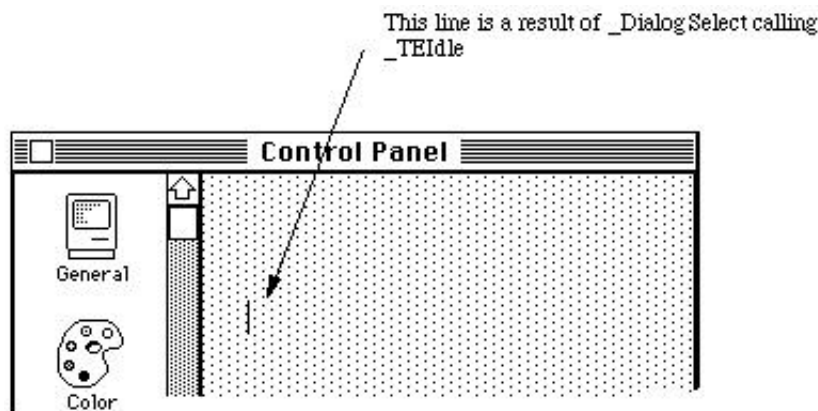


Figure 1. Erroneous Insertion Point

So the Dialog Manager, knowing that it allocated a `TEHandle` for an item that was visible, goes merrily on its way flashing the insertion point. The problem is not simply one of appearance. If a user hits a key, the Dialog Manager tries to process the key-down event just as if the `EditText` item was still available, and this series of events causes a rather nasty crash.

Fortunately, the solution for this problem is a very simple one. If an `EditText` item is hidden with a `_HideDItem` call, the Dialog Manager does not consider it active and will not try to process key-down events for it. So if your cdev contains `EditText` items, part of your error handling should be to first hide the `EditText` items with a call to `_HideDItem`.

before returning an error code or a `NIL` as the cdev's function result.

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References

Inside Macintosh , Volume I, The Dialog Manager

Inside Macintosh , Volume IV, The Dialog Manager

Inside Macintosh , Volume V, The Control Panel

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