

# ESM User Guide

## Developer Notes

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So here is a high level approach for ESM. It's working so far (testing via Practice mode). I've implemented the run and pounce state machines described in the User Notes.

The following is a high level description of the changes made.

- Create subclass of `SpecialCharacterFormatter` named `MagicMessageFormatter`. This is identical to `SpecialCharacterFormatter`, but adds `kMagicMessageEnterKey` (the ↵ character) to the list of allowed characters. The `MagicMessageFormatter` is only used for the Formatter of the Messages -> Special Keys -> Magic Message `NSTextField`.
  - This change requires a `MessagesPreferences.xib` change
- Added a couple of methods to `QsoEntryController` to retrieve the delegate for the active `QsoEntryTextField` as well as "committing" the active `QsoEntryTextField` so as to update the backing `TransientQso` object.
  - `-(QsoEntryDelegate*)delegateForActiveField;`
  - `-(void)commitFocusedEntryField;`
- Additionally added behavior to `QsoEntryController` so as to remember the callsign when the call field is edited. When the call field "ends editing" other guessed exchange entries are only pre-filled if the call has been changed since its last edit. Further, if the call field is edited such that an invalid call remains when editing ends, any previous pre-filled fields are cleared.
- `doMagicMessage` is moved from `Log+Action` to new file: `Log+MagicMessage` since I felt it warranted its own file.
- Update `QsoEntryDelegate` `control:textView:doCommandBySelector:` such that if the selector is `insertNewline:` it checks if the user preference `specialKeyMagicMessagePreferenceKey` is `kMagicMessageEnterKey`. If not, current behavior remains untouched. If it is, it calls `doMagicMessage` (that method now invokes either Jonathan's protocol (v1) or mine (v2) based on the `magicMessageProtocolVersion` preference key. Default is v1). I think a single protocol is preferred by both of us, but I didn't want to go ripping anything out yet.
- `ContestRulesBase` `isExchangeComplete:error:` updated such that when the error is populated, the tag of the first problematic field is inserted into the userinfo of the error with key `ContestRulesFieldTagErrorKey`. This informs the magic message v2 state machine which field should get focus after sending a "?"

- When the Magic Message key is kMagicMessageEnterKey, the menu shortcut for **Log QSO** is changed from ↵ to Ctrl-↵. This facilitates breaking out of the ESM state machine and forcibly logging a QSO.
  - This change requires a **MainMenu.xib** change where the `logQsoMenuItem` of is connected to ApplicationController
  - Added `awakeFromNib` to ApplicationController to update the shortcut
- When running, if the transmit frequency is not in the HF bands (e.g., it's a VHF transmission), pressing enter while the Call field is focused (and before the exchange is sent) will result in navigating to the next field (report) as if tab was pressed instead of skipping over it as if space were pressed. This aligns with suggestions in the SkookumLogger Guide