

# *The **ATC-ML** (Air Traffic Controller - Multi-Lingual)*

## **Table of Contents**

Overview.....	1
The Major components of ATC-ML:.....	2
Using it.....	3
Operating the Radar.....	3
Communicating with Pilots/Targets.....	3
The option 1 addressing == The Operator-Panel (3).....	4
The option 2 addressing == via MP-Pilot List (4).....	4
The option 3 addressing == via FGCOM.....	4
Common Fields on the Operator-Panel:.....	5
The ATIS-button: .....	5
The MP-Button.....	5
Altimeter + Wind: .....	5
Runway:.....	5
Airport and Altitude:.....	5
FGCOM:.....	6
Lang.: = Going Multilingual .....	6
Define/Save Preferences.....	7
Tips:.....	10
History.....	10

## **Overview**

The ATC-Tool is available in several versions, optimized for different tasks and tastes. Originally there were 2 versions of the ATC:

- “Air Traffic Control”: This is styled more like the standard “Cockpit-Environment”, with a big radar-scope and with “Cockpit-like” panels. It is easy to use and has big nomenclatures. Especially the target-informations on the Radar-scope are readable very well.
- “Air Traffic Control Ver.2”: This newer version displays the radar signals directly into the surrounding area. This is a nice solution when working with a limited amount of targets, e.g. watching pilots in the pattern while teaching them.

In the meantime two further Versions were developed, specialized to handle Multiplayer-Events with many targets that have to be controlled concurrently:

- “ATC-rmsjr”: Primarily for Multiplayer-Events with a lot of pilots, that have similar knowledge in piloting and navigation, and do use FGCOM. Thus it can handle the biggest amount of targets.
- “ATC-ML” (MultiLingual): This is especially for the mixed environment, where not everybody uses FGCOM, many do not speak/write English, and some are even real beginners in piloting. This version is especially useful in an mixed environment, as well for piloting skills, FGCOM, and languages. This “ATC-ML” will be described in the following:

## The Major components of ATC-ML:



### Above Numbers define:

1. The **Background**: With the upper case “P” you toggle the Radar-Scope (2) in/out. Without the Radar-Scope the ATC-ML shows a picture of the area, similar to the usual “Tower View”. Keying “*Strg+T*” will toggle on/off “Target-Tracking”. As usual you can zoom in/out by “x”/”X”. This view is very helpful for GND-Control and when watching Landings.
2. The **Radar-Scope**: This displays the targets in range and (depending of the zoom-factor) the general layout of the airport. You switch between this view and the "Background" by keying "P" (upper case "P").
3. The **Operator-Panel**: see the chapter *Using it*
4. The **MP-List**: This is very similar to the known “menu → Multiplayer → Pilot-List” - but interactive, so that the “to be addressed target” can be picked directly by mouse-click. Be aware of the following differences to the standard “Pilot-List”:
  - The “hdg” does not show the direction from the Tower to the target – but the actual heading the target is flying

- in addition to the pilot-list, also the target-speed in kn (nm/h) is shown
5. **Command-Listings:** This list will pop up when a target is picked in the MP-List. There is no (affordable) “translator” available, which can translate all ATC-commands to all languages used worldwide. Thus we gathered the most used commands into an English text-file. This English text-file then can be copied and translated into any language. The operator can select the languages, that any given command shall be displayed/repeated in, in the Multiplayer-Chat, see chapter [\*Lang.: = Going Multilingual\*](#) .

*Note: In the current release this Command-List (5) is moved into the same position as (4) in order to be able to display more lines on small screens!*

## Using it

### Operating the Radar

When the ATC-model boots up and initializes, the radar scope view will be set to a range of 1 mile. You should first check the indicated wind-conditions within the Operator-Panel. Then rotate and offset the **localizer** path (using either **the green panel buttons**, or the control-keys listed in "menu → Aircraft Help") so that it is aligned as precisely as possible with the desired arrival runway. Now you can zoom in/out (using the green buttons on the left side, or using the **up/down cursor-keys**) to your preferred view distance, recommended are *(these values are also shown at the outer circle of the compass-rose!)*:

- 128 for informations about potential arrivals
- 32 and 16 for approach/departure operations,
- 8 for tower operations
- 1 (or 2) for Ground operations

You may click onto the **field “Runway”** to view the settings made above in order to reuse them later or save/recall them – instead of the time-consuming adjustments. *See the chapter "Define/Save Preferences"*

Especially as GND-Control you might toggle **“P”** to blend out/in the radar-scope and watch the targets directly in a “Tower-View”. When the button between the blue/yellow up/down buttons is activated (or you keyed **“Ctrl+T”**) the system will automatically follow the target defined in the operator-panel (see the next chapters). With “x” and “X” you zoom in/out that GND-view.

Be aware that all heading-references are relative to Magnetic-headings. Also the radar screen itself is oriented to Magnetic North - *so the headings seen on the radar can be given directly to the pilots to follow.*

### Communicating with Pilots/Targets

There are three options available to address pilots:

1. The first one addresses one unique target shown in the “Operator-Panel” (3) via MPchat.

2. The second one selects the target out of the “MP-Pilot List” (4)
3. The third one uses FGCOM instead of MPchat (together with options 2 and/or 1 for informations)

All 3 can be combined to keep one target under close supervision (when set in the Operator-Panel), while issuing single commands to other pilots displayed in the MP-List.

### ***The option 1 addressing == The Operator-Panel (3)***

Clicking onto the 2 blue arrow-buttons on the central left side or using the **left/right cursor-keys**, you scroll the available targets until the one of interest shows up in the field “Callsign”. That target will also be illuminated on the radar-scope (if in range!). To the right of the information fields for that target there are purple buttons to issue the most common ATC-commands, according to their symbols:

- turn left/right
- Climb/descent
- SLOW = reduce speed
- ILS = cleared to intercept ILS
- T/O = cleared to Take Off
- LAND = cleared to land
- typing a single “t” into the screen will open an input-field prepared to send any free style information to that callsign, that is displayed in the operator-panel.

After having clicked one of those commands a PopUp will show the complete command as it will be issued via the MPchat. Underneath the upper, non editable line is a second line, in which you can add unique additions to that command (wanted height, runway, speed, greetings, remarks,...). Those additions will be added to the end of the predefined command.

***Be aware that whatever is added in the second line will just be added to the commands ==>> it will NOT BE TRANSLATED!!! (See Chapter: Lang.: = Going Multilingual ). e.g.***

- If you select the command “**turn left heading:**”
- and type into the 2<sup>nd</sup> line: “**250 mach hinne**”
  - 1<sup>st</sup> is sent in English: “turn left heading: **250 mach hinne**”
  - 2<sup>nd</sup> e.g. in German: “Drehen Sie nach links, neuer Kurs **250 mach hinne**”

What you notice is, that

- 2 messages will be sent (if a second language is selected (*see “Lang” at bottom right!*))
- the “**250**” is ok in both languages as the new heading 250°
- the green blue is not understandable, neither for a (normal) German nor an English! (*I am from “Mainz” (in Germany) and there that means: “Hurry Up” / “Beeil Dich”!*).

So watch what you type in the second line !!

Issue the command by clicking onto “Send” or key “ENTER” (twice).

You can terminate it by clicking onto “ESC”. (*You should not use the keyboard-ESC-Key, because that might terminate other MP-windows first!!*)

### ***The option 2 addressing == via MP-Pilot List (4)***

Option 1 is getting very complicated and time-consuming when controlling many targets. Also it

covers only the most common commands. In this "Option 2" you select the targets direct out of a list of all available targets. **This target-list will open/close when clicking onto "MP" (in area "3").**

Click-selecting a target in that MP-list (4) will pop-up a GUI to click-select the wanted command (in area "5") --> clicking onto that will pop-up the Input GUI as described above.

Of course you may also use this option to address the target that is concurrently selected/shown in the Operator-Panel (area "3").

### ***The option 3 addressing == via FGCOM***

Using FGCOM is of course by far the preferred way to operate and should be used whenever possible! But we should keep in mind some drawbacks:

- The dream of "everybody in FlightGear uses FGCOM" will never come through – there always will be beginners (at least we hope so!) that do not yet use FGCOM. And those will have no idea about what ATC is communicating via FGCOM to others in the area – still they need to be informed about other traffic – at least to some extend. So for some commands it might be advisable to reissue them in MPchat after "issuing them via the radio"!
- Not every FlightGear-user speaks English – still we want to attract those to use Multityplay. With the above options we send the English command first, and then repeat that command in a maximum of 2 more languages. Thus the "non English" can learn the English commands, which is a good beginning for getting into a worldwide communication.
- When giving commands via FGCOM, you cannot recall what was said! In MPchat we can – we even can double-check on what was said/typed!

## **Common Fields on the Operator-Panel:**

### ***The ATIS-button:***

Click onto this button to send the most commonly needed ATIS/ATC data to all Targets, including Airport-ID and Altitude, QNH, Wind, active RW (+ILS), FGCOM. This should be used whenever new targets are entering the control-zone.

### ***The MP-Button***

Click onto this button to open/close the MP-List. See the chapter: *"The option 2 addressing == via MP-Pilot List (4)"*

### ***Altimeter + Wind:***

These 3 data-fields are set automatically according to the "METAR"-data. When using the ATC-ML you should always use the

formerly: "Menu → Weather Scenario → METAR"

or newly: "Menu → Environment → Global Weather → METAR Source → Live data"

settings, so that your data are correct when you tell your customers the QNH and/or issue the ATIS-infos. We might not care if some targets use the real "METAR" or just fly in blue sky's - but **we as ATC definitely** should be on actual weather = "Live Data"!

## Runway:

Click onto this field to define the Localizer-Beam inside the radar, and the active runway(s) inclusive ILS-freq, etc. See Chapter: "[Operating the Radar](#)" and "[Define/Save Preferences](#)". The data displayed in this field "Runway" will be included in the ATIS-informations.

## Airport and Altitude:

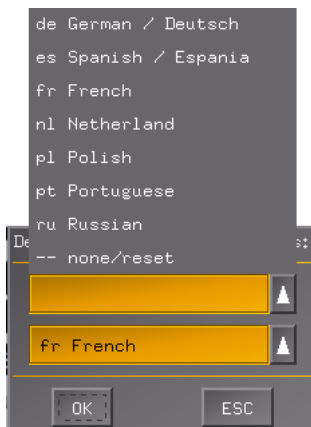
These data are automatically set according to the FGFS-data. Also they are sent within the ATIS.

## FGCOM:

Does display the FGFS "Radio Com1 frequency" – this will be used as (first) contact for any targets. (To be set via menu --> Equipment --> Radio").

## Lang.: = Going Multilingual

Clicking onto that field will open a GUI to define up to 2 more languages, in which the translated commands will be sent via the MPchat:



Click onto either one of the two "combo triangles" to select one of the available translations. **English is always enforced as first language** - the others are used to help "foreigners" to understand and learn the English expressions. But we urgently suggest that the ATC-operator himself does have some English-know-how.

The basic idea for this feature is, to get as many FGFS-Users to participate in Multiplayer events and be able to fly all over the world with any pilot of any Nation, even if not all of them speak/write English. So this feature provides the most common commands in English and issues the same command in some other, selectable language. This way the "non English" may learn the basic commands and loose their shyness when participating in MP, and the very poor ATC-guy has a chance to make himself understandable to "non responsive strangers".

If you "talk/type" to "Non English Tongue People" you surely need more "Commands" than placeable inside the Operator-Panel. But still a very fast selection of the targets and commands is needed. So by clicking onto the new button "MP" a GUI will display all MP-Target-IDs (area "4"), similar to the "Menu → Network --> Pilot List". The MP-button acts like a FlipFlop, so you can always switch the List off/on. Out of that list you select the target → which pops up the list of commands to select from (area "5"). Selecting a command out of that list will open a GUI to show the complete command-line and open an input-field to enter additional input (e.g. the altitude for the command "Climb to..", etc.). These two lines will then be sent via the MPchat - and repeated if the "Lang" field contains additional languages!

**Please help us to get as many different language files as possible in order to achieve a truly worldwide community.** If you can contribute with another language, I would appreciate it very much if you send it to "[j-emmerich@online.de](mailto:j-emmerich@online.de)" to be included into the package as soon as possible.

If you do so, please consider:



- All language-data reside in the Sub-Directory “ATCmsg”
- Please **do not change the common files** used by all languages:
  - "cmd-short" = the list of command-shorties for the selection Pop-Up
  - "cmd-props" = the list of FGFS properties to be inserted into the text
  - "en.txt" = the master - we should teach all users the same basic ATC-commands -- worldwide! If you believe a wording should be changed or something needs to be added, let me know, so that I can change the other languages accordingly
- **take the "en.txt" as a template** and create your file as follows:
  - the new file-name must begin with 2 letters that define the language (only two letters are allowed - see the list of language-groups in FGFS on the wiki: <http://svn.wikimedia.org/svnroot/mediawiki/trunk/phase3/languages/Names.php> ).
  - The file-type must be ".txt"
  - ALL (translated) commands must be in the same line(number) as the master -- the program just searches for line-numbers - not by the content!
  - The amount of format-codes (%s, %3.0f, etc.) must be exactly the same as given in the master, and they must appear in the same sequence.
  - The wording of the commands is up to you. But you should keep them as short as possible – otherwise the MPchat will soon be overloaded. Remember that your unique language command may be only one of three outputted at the same time (*actually with 1 sec in between, otherwise the MPchat causes problems!*). This can become very crowded for untrained people. My experience is, that even with only 2 languages (e.g.: en + de) several people do not realize at first that these are the same – just bilingual!
- **Future Changes:** Of course over time there will be changes to the commands and also additional commands. When additions happen I will insert them into the “en.txt” and “de.txt” - in the other files I will just add a blank line. Because the program does not accept blank lines these new (not yet translated) commands will not be outputted – until someone inserts this translation (and hopefully sends it to me!).

## Define/Save Preferences

As ATC You probably will serve different locations. In order to save the settings you made for any Airport and/or Runway, You can save your settings and reload them with one mouse-click.

Clicking into the field "Runway" will open a new GUI:

Preconfigure/Change RADAR Settings

EDDF ICAO +Job: **ATC** ==> ☒ ATCjomo\_EDDF-ATC ☐ ATCjomo

660 ft = YOU are above GND 1000 ft = Tower Altitude in FGFS  
340 ft = Airfield Elevation in FGFS

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Font-Size   Line-Spacing

3 digit Runway-Heading   Localizer offset

Enter runway announcement: (First 3 digits must define a runway!)

e.g.: "08" or "25R ILS 109.5 + 18" etc.

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COM-1  COM-2

Select from available ICAO's

- EDDF|07L ILS 110.5...
- EDDF|07R ILS 110.9...
- EDDF|18|179|275|12...
- EDDF|25R ILS 109.5...
- EDDK|14L ILS 110.9...
- EDDK|24 ILS 109.1...
- EDDK|32R ILS 109.7...
- EDDT|08L ILS 109.1...
- EDDT|08R ILS 108.5...
- EDDT|26L ILS 109.3...
- EDDT|26R ILS 110.1...
- EDFH|03 ILS 109.3|...
- EDFH|21 ILS 111.3|...
- EDGS|25R ILS 109.5...
- EDGS|31|306| 79|12...
- ELLX|06 ILS 109.9|...
- ELLX|24 ILS 110.7|...
- ENBR|17 ILS 109.9|...
- ENBR|35 ILS 101.5|...

REFRESH Listing

OK SAVE to File DELETE from File

Let us investigate the 2 columns from top to bottom, left to right:  
(Be aware that some functions are only active when you are in "Multiplayer Mode!")

**In the left column** you see input fields with the following data:

- **ICAO:** Keying in an Airport ~~and clicking "ACTIVATE"~~ will directly bring you to that airport – and will replace all other data with FGFS-default data! **BUT it will not change the other data from the previous screen!** So when transferring from one airport to another it is advisable to pick it directly from the list on the right (after you have defined that port once!).
  - To the right of that ICAO You can define your ATC-Job - click onto the combo-wedge. In my philosophy the higher ranking Controller must also take care of the lower ranking jobs - if nobody is assigned for those:
    - **ATC** = "Air Traffic Control" is the default and the highest ranking - i.e. You should only use it, if nobody else is ATC at that airport already! But we define it as "default" because most of the time there will be only one Controller available during Multilayer-sessions - he/she then should take over all responsibility, and that means he/she is "ATC"!
    - **APR** = "Approach" guides incoming Traffic from outside onto final and then turns it over to TWR.
    - **DEP** = "Departure" takes over from tower after Take Off and initial climb
    - **TWR** = "Tower" controls the traffic
      - from "cleared to enter runway" up to turn over to DEP
      - and from Final to exit runway
      - he can also handle Pattern-Traffic, if ATC agrees (because it may become difficult to merge traffic from outside with the one in the pattern – when handled



by 2 persons!

- **GND** = "Ground" controls all traffic on Ground (outside runways) and is responsible for getting a the FlightPlan (may be just the destination ICAO or general direction) from all departing traffic.

- By default all "advises" to Traffic are automatically prefixed with you User-ID that you used when signing into Multiplayer – followed by the ICAO of the airport and your job. See the possibilities given on the right of "job" - just select the one you like!

○=

~~○ by "ICAO-ATC" (e.g. "EDDF-TWR", independent of your Multiplayer User-ID. So everybody knows what function and what location you service. In the MP-Pilotlist, on MPmap, and in manual messages via the chat-boxes your normal MP-ID will be used as usual.~~

~~○ Because there were incidents, were some players just try to "steal" (or just disturb) an already assigned Controller, there is the checkbox "add MP-ID" – if you activate this, then your MP-User-ID will be set before the prefix (e.g. you get a prefix as: "ATCjomo:EDDF-ATC->"). Thus you can make sure who is who! But do not overdo it – the messages are getting very long and hard to read for the pilots!~~

- **Tower-Altitude:** Here you can define the altitude at which you want to work above ground, The FGFS-data are often not really usable! As a reference you always see the actual field elevation to the right. That field elevation plus the "above GND" results in the in FGFS defined "Tower altitude" - which will be inserted by default – but will change if you change the "above GND" value! *(that minus the tower-altitude should be the tower-height!)*.
- With "Font-Size" and "Line-Spacing" you can change the fonts used on the Radar-Scope. With the latest FGFS-Releases those fonts have been changed, they might not even look the same in different system. So feel free to adjust to your preferences! **Right now those are not saved with the other data on thi screen!**
- **Runway Heading:** Input here the real 3 digit runway-heading as found e.g. in Airport-Diagrams or also on MPmap. *(Do not use the 2 digit runway-name, with or without the alpha L R C!)*
- **Offset:** Is the value you get when adjusting the green horizontal arrows in the "Operator Panel" (3) above. Sorry you cannot tune it from here because it is view-dependent! So I suggest to
  - input all data in this GUI except this "Offset"
  - then return to the normal view by clicking "OK" **"ACTIVATE"**
  - then adjust the "extended-runway-line" to match the "radar-shown-runway", best in scope-size 1 mi!
  - then return here by clicking onto the "Runway" field again**If you know or guess the value you need, you can directly input it here**
- **Announcement:** Type in here the runway-announcement as usual (see the example underneath the input-field).
- **Com-1/2:** Here you set the COM-1 and COM-2 "selected" frequencies. COM-1 usually is set to the FGCOM frequency, that you will use at this airport for your ATC-job.

**In the right column** you see a list with all runways you have already defined for all ICAOs. Select one and you will be placed there at once with all the settings you defined.

- With the "REFRESH **Listing from File**" you can reload that list from the data-file "RadarDat.txt", that resides within your private directory *(see at the and of this part, where the*

"buttons" are described).

- The list is always sorted by the first 8 digits in the lines. Usually that are
  - 4 digits taken from the **ICAO**-field (e.g. "EDDF")
  - 3 first digits from the **Announcement**-field (e.g. "25R")
  - and in between the system forces a "I"

So make sure the first 8 digits are different, if you want to save more then one definition for an airport! (e.g. "EDDF|25**R**" and "EDDF|25**L**")

*On the bottom* you find 3 4 switches:

- **OK ACTIVATE:** Exits this GUI after having activated the settings you did or left untouched - *it does not save those data!*
  - *You may have to change the displayed radar-range once to realign the extended runway-lines! (You may use the Up/Down cursor keys after having changed the "Offset")*
- ~~**EXIT/ESC:** Just returns back to the basic screen, without saving and/or setting any changed data. But the "changed data" will still be available when you open that window again!~~
- **SAVE to File:** Will open the data-file and search if there is already an entry for the given "ICAO|Runway"
  - if so it will show both entries as a compare and asks you which one you want to keep
  - otherwise it just sorts and saves the data
- **Delete from File:** Deletes the now shown data from the "ATC-ML\_RadarDat.xml" - i.e. they disappear from your selection list (*after you hit "REFRESH Listing"*). This "Delete" works without a safety "Do You really want to.." - but you can recover by just hitting "Save to File" to save it again - as long as you did not change further data in the Window!

The data are saved in a text-file "ATC-ML\_RadarDat.xml" in your private directory! If you do not know what your private directory is, see the menu-bar in your open FlightGear-Session and select: *menu --> Debug --> Browse Internal Properties --> /sim/fg-home*. (*In older versions the "Debug" may be under "File"!*). In that directory described there look for the subdirectory "aircraft-data".

The Data-File will be created automatically when you save data the first time (or you can copy the example-data from "ATC-ML/ATCmsg" to that sub-directory).

*To open an existing setting* just select one of your predefined ones out of the list on the right!

### **Tips:**

- Depending on where you were with your mouse before, you might have to click twice to select in a list. Similarly *be very careful that you actually type into the Input-field* when typing – otherwise each keystroke is interpreted as a FGFS-command!
- You may change the altitude of the tower/operator *while already working* - or *change the setting as outlined in "Define/Save Preferences"*: Raise it with "CTRL+a", decrease with "CTRL+z".
- For controlling with the ATC-ML you should **switch off the often available AI-traffic** –

that traffic will not follow nor respond to your commands. But on many fine modeled airports the parked AI-planes may make it impossible to spot your targets! To switch that off add the Property-Option in:

- FGFS-Start-command: **--prop:/sim/traffic-manager/enabled=false**
- or in the wizard advanced options → Properties: **/sim/traffic-manager/enabled=false**

Setting this option in the “Browse Internal Properties” while FGFS is running, will not work! It must be available at startup

## **History**

The latest changes are marked in green fonts!

### **August 2011**

- Add Font-Sizes and Job-descriptions
- Review the used properties in the nasal codes
- Kill dead Radar-Targets if not refreshed from MP-server. Those Radar-Targets now will not stay any longer then the Targets in the MP-List! They usually stay longer on MP-map! This needs to be monitored for efficiency – because those targets may now disappear even if it is only disappearing for a short hang in telephone-lines, MPserver-prob, etc..

### **June 2011**

- add the possibility to vary the Tower-settings and save/retrieve them. See the new chapter "Define/Save Preferences"
- replace the MP-User-ID by an "ATC-Job" announcement (e.g. "KSFO-TWR") when issuing commands to targets.
- add a "combo-selection" to set the languages

### **March 2010**

- finalized MPList to show data as in Mppilots + more
- changed the ".xml" data-Type in the Subdir ATCmsg to ".txt"

### **February 2010**

modifications and new name “ATC-MS” by Joe Emmerich (aka “jomo”)

- Removed the verification for TARGET still being "in Radar-Range" or "valid". This avoids loosing the chosen target when the Radar-Range was reduced or when the MPserver missed updating the target in Time.
- Enabled up/down keys to change Radar-Range and left/right keys to select Targets
- Extended the target-selection over the whole MP-range (100 mi) - and keep the selected

target in the radar-text-fields until the operator intentionally chooses another one! Thus you can now check if the runway is free (close up 2Mi) and still keep the approaching target (wide range) in the display-fields. Also it prevents loosing the target if MP cannot deliver new data in time – e.g. the target is dropped locally (maybe just for a second or so!).

- Use an own standard FG-Command-Input-Line to avoid breakdowns when the standard MPchat-input is used concurrently by different functions
- Added a new field "Runway" to ease setting up the ILS-Beam-Indicator (see chapter "Using")
- Added a new button "ATIS" (see chapter "Using")
- Added new fields for the "ATIS data" for quick ref. during speaking on FGCOM
- Added Multilingual feature "MP" (see description)
- Added the field "Lang" to define which languages are in use

### ***August-September, 2009***

modifications by Robert M. Shearman, Jr. (aka "MD-Terp"),  
based heavily on ATC and ATC2 by Syd Adams and Csaba Halasz

#### **KNOWN BUGS / ISSUES:**

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- (1) In general, this setup is best on very large displays. On smaller displays it may not be legible enough to be useful.
- (2) The localizer guideline sometimes extends past the edge of the radar screen.