Oblique Mercator projection hanging when rendering map

<table>
<thead>
<tr>
<th>Status</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
<td>Severe/Regression</td>
</tr>
<tr>
<td>Assignee</td>
<td>Projection Support</td>
</tr>
<tr>
<td>Regression?</td>
<td>No</td>
</tr>
<tr>
<td>Easy fix?</td>
<td>No</td>
</tr>
<tr>
<td>Resolution</td>
<td>fixed/implemented</td>
</tr>
<tr>
<td>Affected QGIS version</td>
<td>2.14.3</td>
</tr>
<tr>
<td>Operating System</td>
<td></td>
</tr>
<tr>
<td>Pull Request or Patch supplied</td>
<td>No</td>
</tr>
<tr>
<td>Crashes QGIS or corrupts data</td>
<td>No</td>
</tr>
<tr>
<td>Copied to github as #</td>
<td>22797</td>
</tr>
</tbody>
</table>

**Description**

My custom CRS' that use oblique mercator no longer render properly in 2.14. Some layers are rotated properly, others are not, and others are missing. Also, rendering would normally take 2-5 seconds in v2.10 but now it can take 10s of minutes - making them unusable. "Normal" CRS' provided by the program work fine. Here's one of my CRS' for example:

```
+proj=omerc +lat_0=53.155728 +lonc=-117.171755 +alpha=-44.25 +gamma=0 +k_0=1.00064458 +x_0=0 +y_0=0+ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +units=m +no_defs
```

And another from [http://gis.stackexchange.com/questions/83861/using-customized-coordinate-system-for-archaeological-site-data](http://gis.stackexchange.com/questions/83861/using-customized-coordinate-system-for-archaeological-site-data) that also no longer works:

```
+proj=omerc +lat_0=51.4 +lonc=7 +alpha=-10 +k=1 +x_0=0 +y_0=0 +ellps=WGS84 +towgs84=0,0,0,0,0,0,0 +units=m +no_defs
```

Quickly switching between my custom CRS and NAD83 also causes QGIS to freeze and eventually a force quit.

**Associated revisions**

**Revision 85128c54 - 2016-06-20 11:30 AM - Even Rouault**

QgsCoordinateReferenceSystem::setProj4String(): harden validation

OSRImportFromProj4() may accept strings that are not valid proj.4 strings, e.g. if they lack a +ellps parameter, it will automatically add +ellps=WGS84, but as we use the original mProj4 with QgsCoordinateTransform, it will fail to initialize so better detect it now.

Fixes #14844

**Revision 7b0bec7b - 2016-06-20 11:35 AM - Even Rouault**

QgsCoordinateReferenceSystem::setProj4String(): harden validation

OSRImportFromProj4() may accept strings that are not valid proj.4 strings, e.g. if they lack a +ellps parameter, it will automatically add +ellps=WGS84, but as we use the original mProj4 with QgsCoordinateTransform, it will fail to initialize so better detect it now.
History

#1 - 2016-05-23 12:58 PM - Giovanni Manghi
- Category set to Projection Support
- Status changed from Open to Feedback

Could you please attach sample project with data?

#2 - 2016-05-23 01:54 PM - Giovanni Manghi
- Crashes QGIS or corrupts data changed from No to Yes

#3 - 2016-05-24 10:31 AM - Matt Dallaire
- File CV.zip added

Sample project attached. Used QConsolidate plugin. Thanks for your attention.

#4 - 2016-05-24 12:42 PM - Giovanni Manghi

Thanks or the project:

I'm opening it in QGIS 2.14.3 and I notice that is missing quite a lot of layers.
Not sure if it is for this reason, but the project opens fine (with the provided layers), navigation zoom in/out is also ok, styling, labels, etc.

Could you please describe what would be the issue in the provided project?

Thanks!

#5 - 2016-05-24 01:14 PM - Matt Dallaire

I removed all the large layers due to the 5MB file upload restriction.

Change the project CRS to:
```
+proj=omerc +lat_0=53.155728 +lonc=-117.171755 +alpha=-44.25 +gamma=0 +k_0=1.00064458 +x_0=0 +y_0=0+ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +units=m +no_defs
```

Notice the layers are now being rendered in varying ways. For example, "CVM Grid" (ESPG:26911) does not change position or rotate, "083C_water_c_l" (ESPG:4269) moves toward the origin, and "RT Mine Footprint" (custom projection) actually is the only layer that projects correctly - probably because it matches the above CRS string. It almost seems like OTF projection is not working, in my opinion.

This was not an issue in recent previous releases.

Cheers,
I see. Tagging as regression.

#7 - 2016-06-19 02:17 PM - Even Rouault

The issue with "+proj=omerc +lat_0=53.155728 +lonc=-117.171755 +alpha=-44.25 +gamma=0 +k_0=1.00064458 +x_0=0 +y_0=0 +ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +units=m +no_defs" is a missing space before +ellps. Addressed by https://github.com/qgis/QGIS/pull/3217

I didn't notice issues with "+proj=omerc +lat_0=51.4 +lonc=7 +alpha=-10 +k=1 +x_0=0 +y_0=0 +ellps=WGS84 +towgs84=0,0,0,0,0,0,0 +units=m +no_defs"

#8 - 2016-06-20 02:30 AM - Even Rouault

- Status changed from Open to Closed

Fixed in changeset commit:"85128c54191cfedeae04ca9c4ac0341ab8f5088".

#9 - 2016-06-20 02:38 AM - Even Rouault

- Resolution set to fixed/implemented
- Target version changed from Future Release - High Priority to Version 2.14

Files

<table>
<thead>
<tr>
<th>Files</th>
<th>Size</th>
<th>Date</th>
<th>Author</th>
</tr>
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<tbody>
<tr>
<td>CV.zip</td>
<td>1.05 MB</td>
<td>2016-05-24</td>
<td>Matt Dallaire</td>
</tr>
</tbody>
</table>