

ARRL Logbook of the World

21st Century QSLing For Amateur Radio

Gary Stebbins, KC9GGV, WAS, DXCC

QSL Manager (electronic) W9TE and K9NCS

Introduction

- ARRL's *Logbook of the World* (LoTW) system is a repository of log records submitted by users from around the world. When both participants in a QSO submit matching QSO records to LoTW, the result is a QSL that can be used for ARRL award credit.
- To minimize the chance of fraudulent submissions to LoTW, all QSO records must be digitally signed using a digital certificate obtained from ARRL. Obtaining such a certificate requires verification of the licensee's identity either through mail verification (US) or inspection by ARRL of required documentation (non-US).
- Software developed by ARRL can be used to convert a log file (in ADIF or Cabrillo file format) into a file of digitally signed QSO data, ready for submission to LoTW.
- LoTW began operation on September 15, 2003.

Traditional QSL Costs

- Typically a QSL with an overseas contact costs an average of \$3 and up per QSL.
- Consider you need one completed QSL card for the contact.
- Two envelopes, one will be for return with your address.
- An IRC or two “green stamps” and air mail postage at 90 cents for international delivery.
- Which means a DXCC award will cost about \$300 via traditional QSL means for postage expenses alone.

ARRL Decision

- In the late 1990's the ARRL Board of Directors could see that the costs of QSLing were getting extremely expensive. DXing is becoming quite popular partly due to increased contesting.
- In 2000 it was decided that a secure means to process QSLs needed to be developed.
- But, the integrity of the DXCC (The ARRL's most coveted award) had to be maintained.
- This led to the TQSL secure software and the Logbook of the World system.

Current LoTW Statistics

- **183,671,130** QSO records have been entered into the system.
- **15,026,587** QSL records have resulted.
- **22,158** Users are registered in the system
- **33,917** Certificates are active
- **686,734** User files have been processed
- This was as of Friday, September 26, 2008 at 0030 UTC.

My LoTW Stats

- Today is Fri, 26 Sep 2008 UTC
- You are **KC9GGV**
- You have **3,169** QSO records
- You have **1,345** QSL records
- Every time you login to your LoTW account you will see your current statistics.

ARRL Benefits

- The use of the Logbook of the World is a benefit of being an ARRL member.
- You also have access to the ARRL Outgoing QSL Bureau (more on that later).
- Subscription to QST (or QEX) two of the finest amateur radio publications in the world and unlimited access to the entire ARRL web site and its wealth of knowledge. (members areas and articles)
- Many other benefits too numerous to mention at this time.

WAS, DXCC and VUCC Awards

- Some of you are saying, I am only a technician why would I be interested in the LoTW.
- How many of you know about the VUCC awards program?
- The VUCC is for working 100 maidenhead squares on VHF/UHF frequencies.
- Besides your DXCC statistics, you can also maintain your Worked All States award info in the LoTW system.

Getting Started

- Point your web browser at www.arrl.org/lotw
- Select the “Getting Started” hyperlink.
- **Step 1 - Download "TQSL"**
- The TQSL software is available for Windows, Mac OS X and Linux operating systems.
- You will need this software installed on your PC to create your certificate request.
- Install the TQSL software on your personal computer.
- Read the instructions on the web page carefully.

2. Submitting Certificate Request

- Send the file created in step 1 as an attachment in an email message to lotw-logs@arrl.org or upload it via the Web (<https://www.arrl.org/lotw/>). If you are a US licensee, you will then receive a post card in the mail with further instructions. (The post card will be sent to the address you have in the FCC database, so make sure that is correct!). If you are submitting a cert request for a non-US callsign, you will receive an email asking you to submit proof of license (a copy) and a copy of one other official document that shows your name, like a driver's license. See <https://www.arrl.org/lotw/docreq> for details.

Your Address

- This is extremely important.
- The address in the FCC ULS database is used by the ARRL for mailing your account password post card the first time you apply for a TQSL certificate.
- I would suggest you get your address updated in the FCC ULS if it is not correct before applying for a certificate for the LoTW. (QRZ and Hamcall use the FCC ULS address also.) Wrong address....No paper QSL either!!!
- Since 1998 all amateurs have been issued a FRN and you can obtain a password to update your address on the FCC ULS. <http://wireless.fcc.gov/uls/index.htm?job=home>

3. Load the Certificate

- Once your certificate has been issued it will be sent to the email address you entered into the certificate request during Step 1. You'll probably be able to double-click the attachment (the certificate will have the file name .tq6) in the received message to launch TQSLCert to import the certificate. If that doesn't work, save the attachment to your hard drive, run TQSLCert and use the File menu's "Load Certificate File" command to load-in the certificate file. Once that's done, TQSLCert should show your certificate in its certificate list. When the launch is complete you will see a message that says the program has loaded **three** certificates. This is normal. Subsequent requests for additional certificates will deliver messages of two, or one certificate being installed.

4. Save the Certificate

- This step isn't required but is a very good idea. If you do not perform this step and later lose your certificate (due to a hard-drive crash or system reinstall, for example), your certificate will be unrecoverable. Click on the certificate in the certificate list to select it, then choose the Certificate menu's Save command. Save the certificate file onto a floppy disk or other off-line medium. You will also be able to use this saved certificate file to load your certificates onto another computer later.

5. Request Additional Certificates

- If you go on a DX expedition or travel to another country to operate with a call other than your home call. You can request additional certificates for call signs related to your foreign call sign if applicable.
- Another example would be if you operate under a special event call.
- This is optional of course.

6. Create a Log File

- If you have a logging program that can produce log files in ADIF or Cabrillo format, you can use those files directly. If you just want to enter a few QSOs into a log file, you can run TQSL and choose the File menu's "Create New ADIF file" command.
- There are lots of FREE logging programs available on the internet that support Amateur Data Interchange Format (ADIF) and Cabrillo contest format.
- The DX Lab Suite is FREE and has several nice features. That's a topic for another class.

7. Create a Station Location

- In TQSL, select "Station/Add Location" from the menu. Step through the wizard to specify the location of the station used to make the contacts you'll be submitting. At the end of the wizard, enter a name to use for this station location, i.e., "W1AW Newington," or "W1AW/2 New York City."

8. Create a Signed Log Submission

- In TQSL, select "Sign existing ADIF or Cabrillo file" from the File menu. In the resulting "Select Station Location" dialog, select the station location (click on and click "Ok" (the OK button should then be available). You'll then be asked to select the log file (a file in ADIF or Cabrillo format) to sign. Finally, you'll be asked to specify the filename to which to write the signed log. As the program begins you will also be asked to enter your private key password (from Step 1d). As the program works you can watch the progress of the signing. When the signing is complete you will see a message telling you how many records were signed and tell you the location of the file, which has an extension of .tq8.

9. Send the Log Submission

- Send the file created in step 8 as an attachment via email to lotw-logs@arrl.org. You will receive an email response. (More than one file can be attached to an email message.) Your email does not need to have anything in the subject line or in the body of the email.
- You will receive an email confirmation message.
- Some logging programs (i.e. DXKeeper the logging portion of DX Lab Suite) let you automatically sign and upload your submission to the LoTW once configured with your certificate information.

10. Visit the LoTW Website

- When you received your certificate via email you should also received your login and password for the web site.
- Visit the LOTW Web site at <https://www.arrl.org/lotw/> to view your submitted data and confirmations. Submit any bug reports to lotw-help@arrl.org.
- Enter any logs you like for QSOs made after November 1, 1945.

Today is Sat, 15 Sep 2007 UTC

[Log On](#)




Log on to Logbook of the World

Note: You must have been issued a certificate before you can log on to the LoTW site.

Username:

Password: Note: This is **not** the password sent to US amateurs via postcard!

Your browser must support cookies in order to log in.



THE **LOGBOOK** OF THE WORLD™

Today is Sat, 15 Sep 2007 UTC
You are W9TE
[Log Off](#)
You have 1,763 QSO records
You have 189 QSL records

Home Your QSOs Awards Find Call Upload File Your Account

Logbook Users' Home Page

Welcome to the Logbook of the World!

Report problems to lotw-help@arrl.org

Looking for your certificate? Click **Your Account** in the menu above.

News and Notes

Jun 13, 2007: LoTW Server Upgraded -
- The Logbook system has been upgraded

TrustedQSL Status

Current *TrustedQSL* software version: 1.11
([Download](#))

Logbook Status

139,337,064 QSO records have been entered into the system.

Most recent QSO record received 2007-07-13 00:49:17Z

Select QSOs to List	
Call sign worked:	<input type="text"/> <small>May use wildcards (? and *)</small>
Your call sign:	- Any -
Starting Date:	<input type="text"/> Time: <input type="text"/>
	<small>YYYY-MM-DD HHMM</small>
Ending Date:	<input type="text"/> Time: <input type="text"/>
	<small>YYYY-MM-DD HHMM</small>
Mode:	- Any -
Band:	- Any -
<input type="checkbox"/> Show confirmed QSOs only	
DXCC Entity:	- Any -
Sort by	QSO Date <input type="checkbox"/> Descending
Clear Form	
Award Account	
- None -	

Submit Query Form
Submit
Common Queries
Most Recent QSLs
Most Recent QSOs

Your Logbook QSOs - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/qsos?qso_query=1&awg_id=&acct=&qso_callsign=&v

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook QSOs

25 Records Shown (1-25)
Sorted by QSL Date (0.814841 seconds elapsed)

[Next](#)

	Call sign	Worked	Date/Time	Band	Mode	Freq	QSL
Details	W9TE	W8OSP	2007-06-24 00:23:00	80M	SSB	3.5	UNITED STATES OF AMERICA
Details	W9TE	VA1CHP	2006-04-23 02:20:42	40M	RTTY	7.042	CANADA
Details	W9TE	VA1CHP	2006-04-22 13:17:02	20M	RTTY	14.095	CANADA
Details	W9TE	W4DXA	2007-06-24 06:51:00	20M	CW	14	UNITED STATES OF AMERICA
Details	W9TE	W4DXA	2007-06-23 19:58:00	40M	CW	7	UNITED STATES OF AMERICA
Details	W9TE	W5FR	2007-06-24 14:21:00	20M	CW	14	UNITED STATES OF AMERICA
Details	W9TE	W5FR	2007-06-24 06:01:00	40M	CW	7	UNITED STATES OF AMERICA
Details	W9TE	WB2JEP	2007-06-24 00:31:26	20M	RTTY	14.08515	UNITED STATES OF AMERICA
Details	W9TE	N4N	2007-06-24 07:49:00	40M	CW	7	UNITED STATES OF AMERICA
Details	W9TE	N4N	2007-06-24 03:59:00	80M	CW	3.5	UNITED STATES OF AMERICA
Details	W9TE	N4N	2006-06-25 00:06:00	40M	SSB		UNITED STATES OF AMERICA
Details	W9TE	N4N	2006-06-24 19:25:00	40M	CW		UNITED STATES OF AMERICA
Details	W9TE	W8AV	2007-06-24 01:53:00	40M	CW	7	UNITED STATES OF AMERICA
Details	W9TE	W2ZQ	2007-06-24 01:06:00	20M	CW	14	UNITED STATES OF AMERICA
Details	W9TE	W2ZQ	2007-06-24 15:49:00	40M	CW	7	UNITED STATES OF AMERICA
Details	W9TE	N9KI	2006-06-24 18:15:00	40M	CW		UNITED STATES OF AMERICA

Internet 100%

Logbook Awards

Your LoTW ARRL DXCC (DX Century Club) Account(s)

For an overview of LoTW DXCC support, see [Applying for DXCC Credits with Logbook of the World](#).

W9TE - UNITED STATES OF AMERICA

Select DXCC Award Account

Your LoTW ARRL WAS (Worked All States) Account(s)

W9TE

Select WAS Award Account

Create New WAS Award Account

About Award Accounts

Award accounts are created either automatically as needed or when you create them, depending on the awards program:

- [DXCC](#) - Accounts created automatically
- [WAS](#) - Accounts created by you

For automatically created award accounts, when one of your QSOs gets matched (QSLed), a new award account is created if there is not an existing account that can be used.

DXCC Accounts

For DXCC, an account is created for each unique combination of call sign and DXCC Entity. For example, suppose W1AW had uploaded QSOs signed using certificates bearing these call signs and DXCC Entities:

W1AW (USA)

1AW (USA) old call

Your Logbook Award Account - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/awardaccount?awardaccountcmd=status&awg_id=WAS&... Live Search

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook Award Account

Award Account Menu

- Account Status
- Account Credits
- Modify Account
- Application
- Application History
- Link Account

Your Logbook WAS Account (W9TE)

Account Status

Award	Selected	Applied	Awarded	Total
Basic	40	0	0	40
80M	7	0	0	7
40M	29	0	0	29
20M	25	0	0	25
15M	2	0	0	2
10M	1	0	0	1
6M	8	0	0	8
2M	2	0	0	2
70CM	2	0	0	2
CW	31	0	0	31
Phone	20	0	0	20
RTTY	22	0	0	22
80M Phone	4	0	0	4
80M CW	1	0	0	1
80M RTTY	3	0	0	3

Notes

- Click on the **Awards** item in the menu at the top of the page to select a different LoTW award account.
- You can click on the links in the Account Status table to view the credit list for an individual award.

Done Internet 100%

Your Logbook Award Account - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/accountcredits?awg_id=WAS&ac_acct=1&ac_view=penc

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook Award Account

Award Credits: Selected: 40 Applied for: 0 Awarded: 0 Total: 40
Key: Selected - Applied

Entity	Basic
Alabama	W4JSI
Alaska	KL7AA
Arizona	K7JE
California	W6WRT
Colorado	W0EEA
Connecticut	W1NRB
Delaware	K3MQ
Florida	K4EAC
Georgia	KF4GTA
Illinois	N2BJ
Indiana	K9SG
Iowa	KD0Q
Kansas	K0RU
Kentucky	K4WW
Louisiana	W5DDL
Maryland	W3ZJ
Massachusetts	K1AIR

Internet 100%

Your Logbook Award Account - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/awardaccount?awardaccountcmd=status&awg_id=DXCC

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook Award Account

Award Account Menu

- Account Status
- Account Credits
- Modify Account
- Application
- Application History
- Link Account

Your Logbook DXCC Account (W9TE - UNITED STATES OF AMERICA)

Account Status

Award	Selected	Applied	Awarded	Total / Current
Mixed	7	0	0	7 / 7
CW	3	0	0	3 / 3
Phone	1	0	0	1 / 1
RTTY	6	0	0	6 / 6
80M	1	0	0	1 / 1
40M	3	0	0	3 / 3
20M	7	0	0	7 / 7
15M	1	0	0	1 / 1
10M	1	0	0	1 / 1
6M	1	0	0	1 / 1
2M	1	0	0	1 / 1
Challenge	14	0	0	--- / 14

* = Award has been issued

This account includes credits for the following:

W9TE - UNITED STATES OF AMERICA

Notes

- Click on the **Awards** item in the menu at the top of the page to select a different LoTW award account.
- You can click on the links in the Account Status table to view the credit list for an individual award.
- If you have an existing DXCC record that this account should be linked to, use [Link Account](#). This will allow the LoTW system to keep track of those QSLs that would give you new DXCC credits. This will also allow you to view your DXCC record here on the LoTW Web site.
- When you are ready to apply your LoTW credits

Internet 100%

Your Logbook Award Account - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/accountcredits?awg_id=DXCC&ac_acct=1&aw_id=DXCC

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook Award Account

View: Pending credits All credits All entities
 Mixed
 Sort list by: Name Prefix

- Pending credits include those QSLs Selected for award credit and those Applied for via Application.
- Use All credits to list both Pending and Awarded credits for the selected award.
- Use All entities to list all of the available DXCC entities.

Award Credits: Selected: 7 Applied for: 0 Awarded: 0 Total: 7
Key: Selected - Applied

Entity	Mixed
ALASKA	KL7AA
CANADA	VE9DX
EUROPEAN RUSSIA	UA3BS
FEDERAL REPUBLIC OF GERMANY	DM5EL
MEXICO	XE1ZVO
UNITED STATES OF AMERICA	K5WW
VENEZUELA	YV5AAX

Internet 100%

Your Logbook Award Account - Windows Internet Explorer

https://p1k.arrl.org/lotwuser/logbook/application.php?awg_id=DXCC&ac_acct=1

File Edit View Favorites Tools Help

Links Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Your Logbook Award Account

Your Logbook DXCC Account (W9TE - UNITED STATES OF AMERICA)

DXCC Award Application -- Part 1

Use this form to apply for a new DXCC award or an endorsement.

Note: If you have an existing DXCC record, you **must** [link it](#) prior to submitting an application!

Entity	QSO	Check all Clear all	Awards											
			Mixed	CW	Phone	RTTY	80M	40M	20M	15M	10M	6M	2M	Challenge
ALASKA	KL7AA	<input type="checkbox"/>	X	X					X					X
CANADA	VE9DX	<input type="checkbox"/>	X			X			X					X
CANADA	VA3DF	<input type="checkbox"/>		X				X						X
EUROPEAN RUSSIA	UA3BS	<input type="checkbox"/>	X			X			X					X
FEDERAL REPUBLIC OF GERMANY	DM5EL	<input type="checkbox"/>	X			X			X					X
MEXICO	4A7L	<input type="checkbox"/>						X						X
MEXICO	XE1ZVO	<input type="checkbox"/>	X			X			X					X
UNITED STATES OF AMERICA	W0EEA	<input type="checkbox"/>			X							X		X

Done

Internet 100%



Today is Sat, 15 Sep 2007 UTC
You are W9TE
[Log Off](#)
You have 1,763 QSO records
You have 189 QSL records

- Home
- Your QSOs
- Awards
- Find Call
- Upload File**
- Your Account

Logbook File Upload

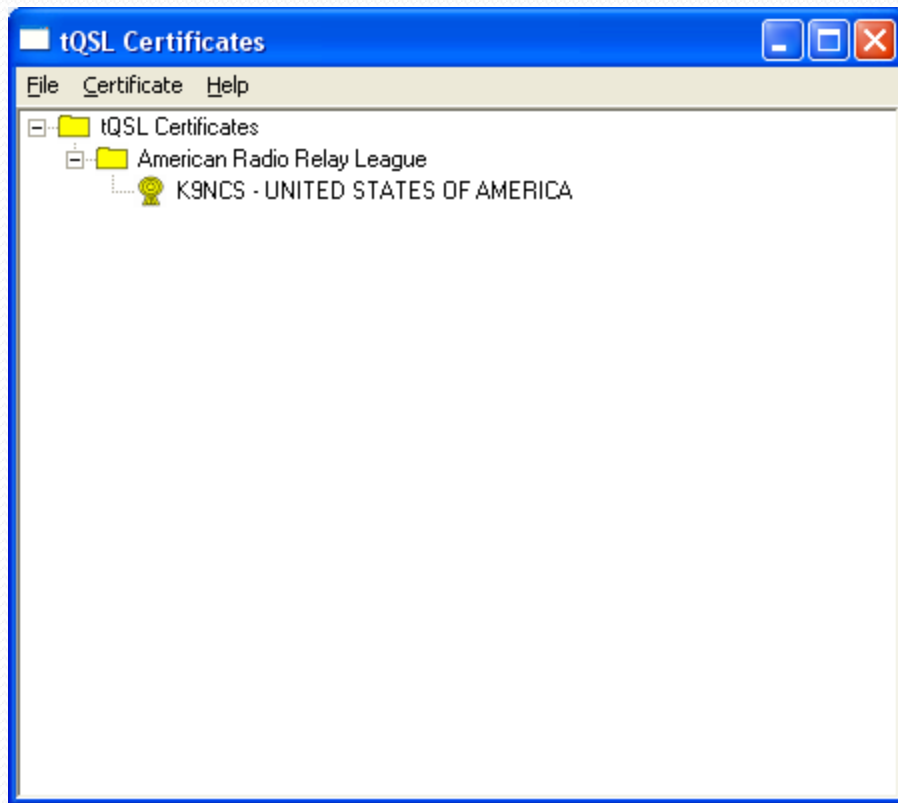
Here you can upload a log (.TQ8) or certificate-request (.TQ5) file.

File to Upload:

You can also submit files via email to lotw-logs@arrl.org.

After Installing TQSL

- After you have installed the TQSL software you will be able to create a certificate.
- (Windows OS) Select Start > Programs > TrustedQSL
- Then select TQSLCert from the list.
- This will start the TQSLCert software which will enable you to create your initial certificate request to send to the ARRL.
- On the tQSL Cerificates page select File > New Certificate Request.



Generate Certificate Request



This will create a new certificate request file.

Once you supply the requested information and the request file has been created, you must send the request file to the certificate issuer.

Certificate Issuer:

American Radio Relay League

American Radio Relay League

Logbook of the World

Email: lotw-logs@arrl.org

URL: <https://www.arrl.org/lotw/>

Help

< Back

Next >

Cancel

Generate Certificate Request ✕

Call sign:

DXCC entity:

QSO begin date:
Y M D

QSO end date:
Y M D

Generate Certificate Request



Name

Address

City

State

Zip/Postal

Country

Generate Certificate Request



Your e-mail address

Note: The e-mail address you provide here is the address to which the issued certificate will be sent. Make sure it's the correct address!

Help

< Back

Next >

Cancel

Generate Certificate Request



You may protect your private key for this certificate using a password. Doing so is recommended.

Password:

Enter the password again for verification:

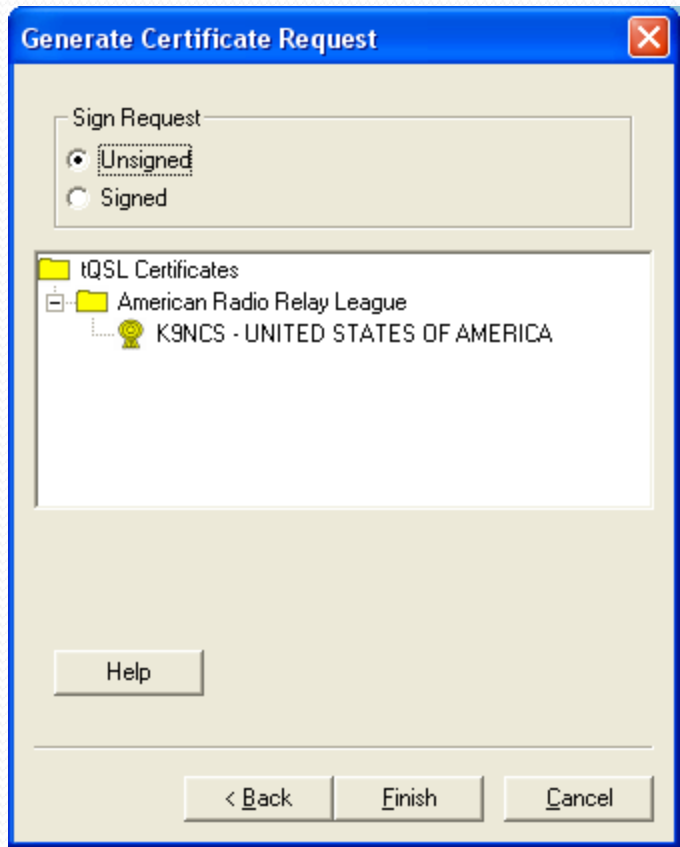
DO NOT lose the password you choose!
You will be unable to use the certificate without this password!

Help

< Back

Next >

Cancel

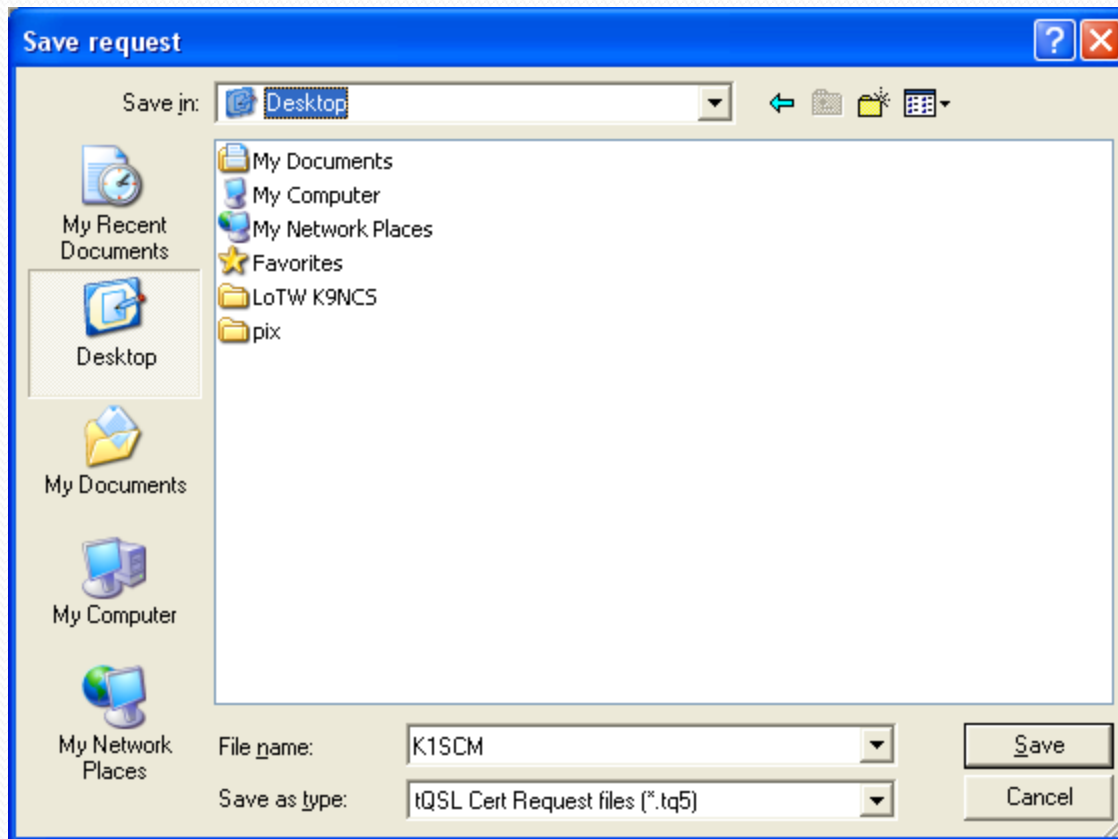


Warning

You have one or more certificates that could be used to sign this certificate request.

It is strongly recommended that you sign the request unless the certificates shown are not actually yours. Certificate issuers may choose not to permit unsigned certificate requests from existing certificate holders.

Do you want to sign the certificate request?
Select "Yes" to sign the request, "No" to continue without signing.

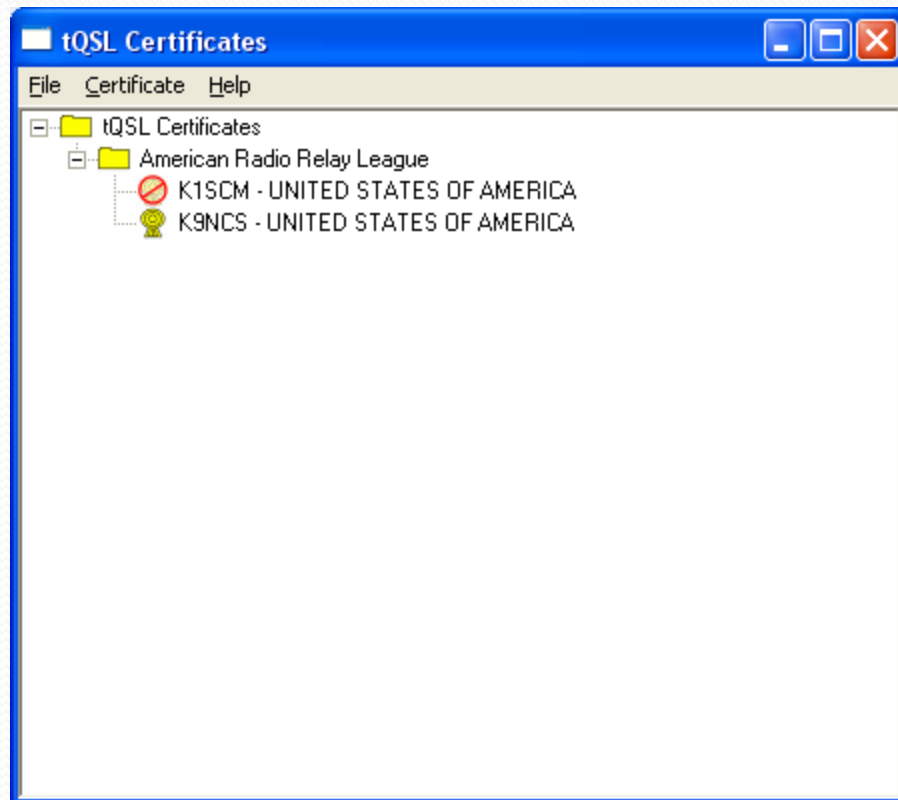


tQSL Cert



Your may now send your new certificate request (C:\Documents and Settings\gary\Desktop\K1SCM.tq5)
to:
lotw-logs@arrl.org
or see:
<https://www.arrl.org/lotw/>

OK

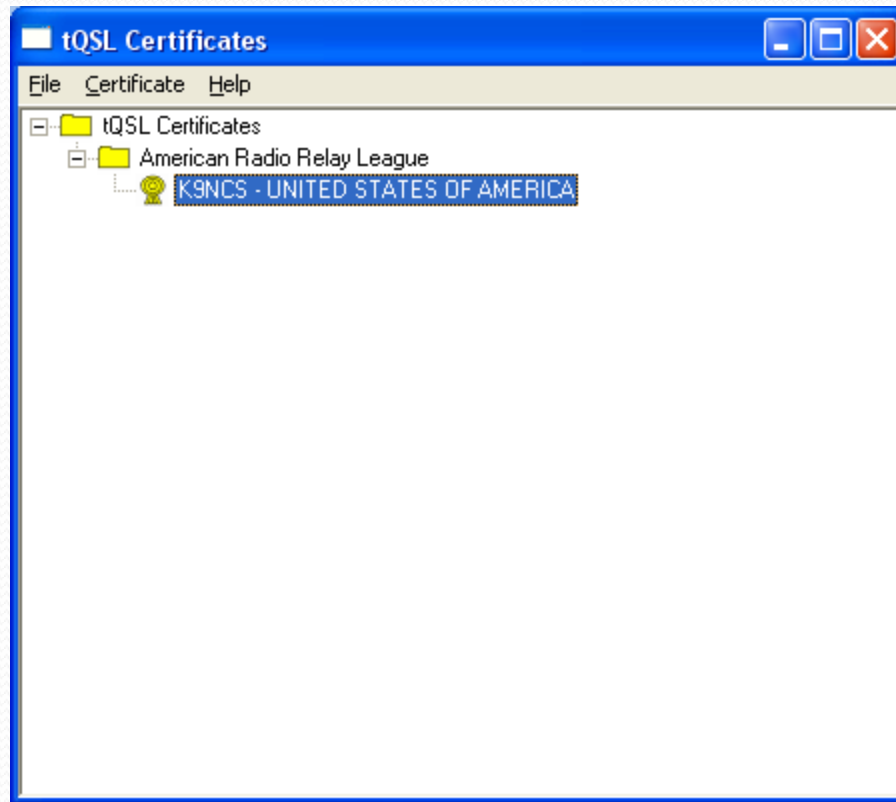


Wait For Certificate

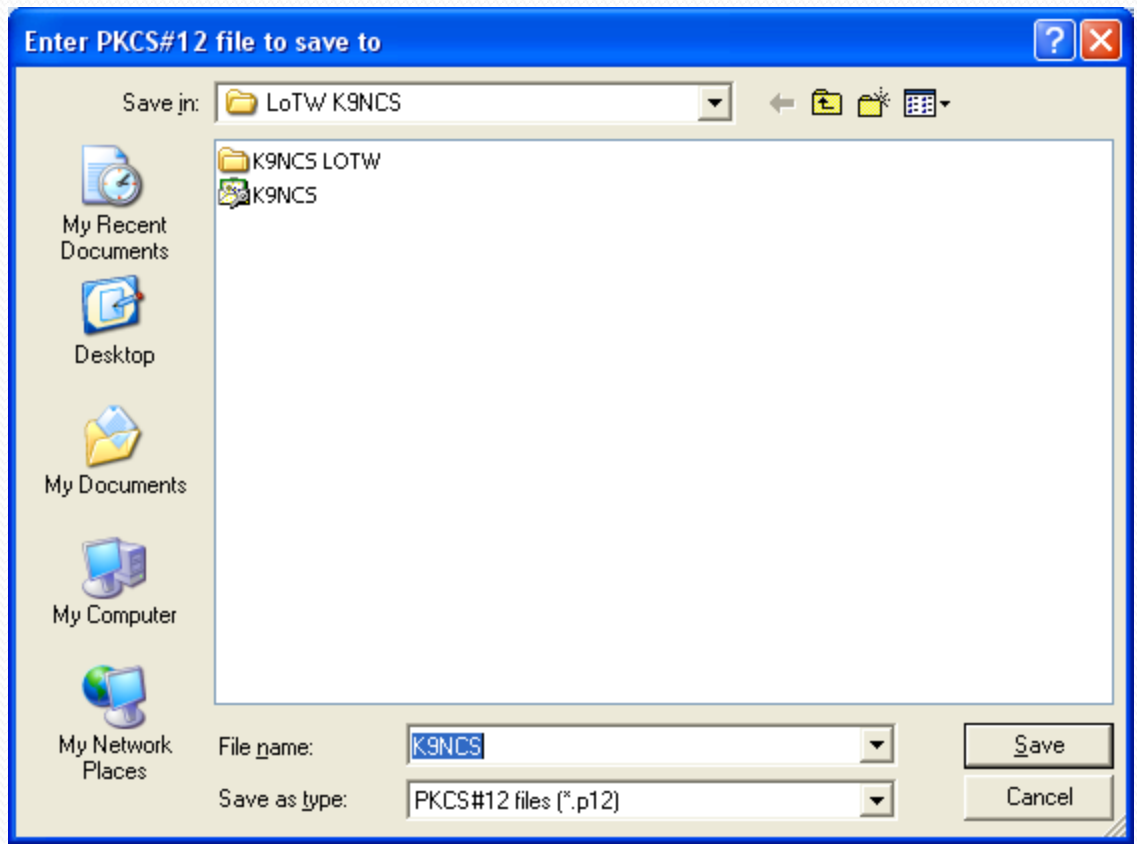
- After you have emailed your certificate request (or uploaded it on the web site if you have access) you have to wait for the request to be granted.
- In most instances when the certificate is approved the new .tq6 file and your login and password for the LoTW web site (your account) is sent to you via the email address in the request.
- Follow the instructions in the email to install and activate the new certificate.

After Loading Certificate

- After you have loaded your .tq6 certificate file the red circle will disappear and your certificate is ready to be used to sign log files.
- As suggested, this is a good time to save the file in case of a computer crash and if you wish to use it on other PCs with TQSL installed.
- Select the certificate you want to backup (do not backup .tq5 or .tq6).
- Backup only the approved certificate file.



Select Certificate > Save

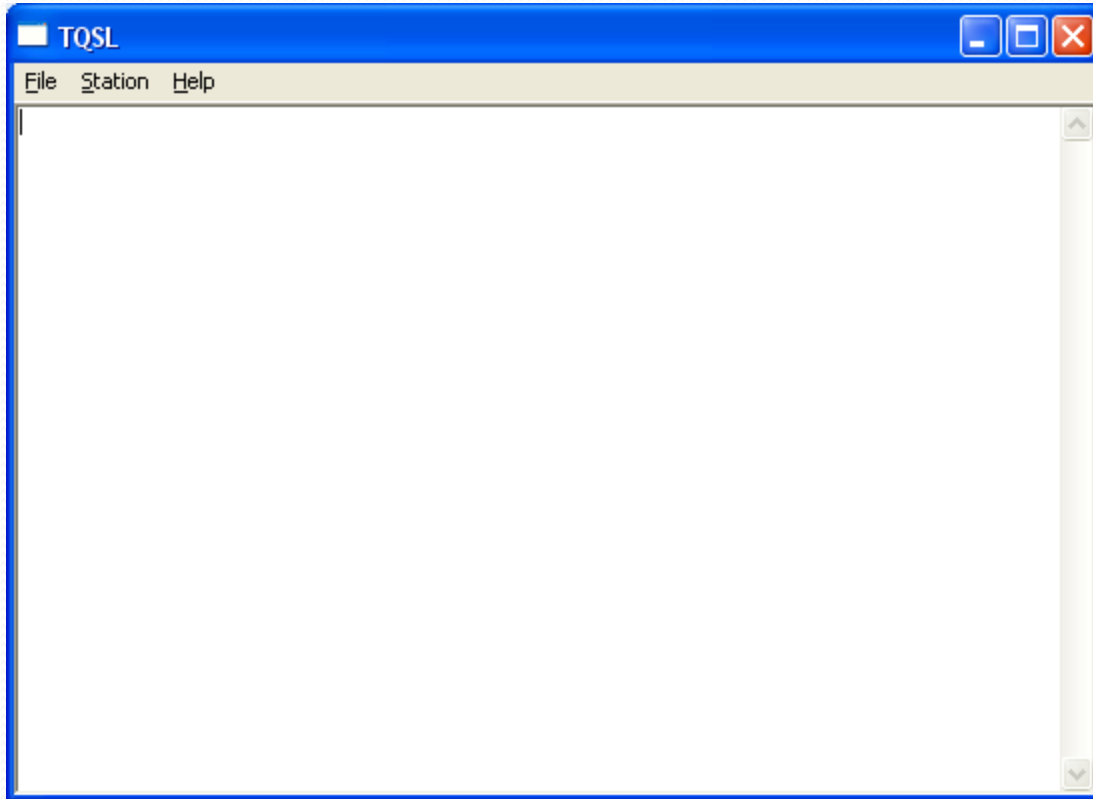



Copy the .p12 File

- The .p12 file is your actual certificate with all of its components.
- You can copy this file to a floppy disk or flash drive to install on other PC's with the Load Certificate command in TQSLcert.
- Certificates are good for three years.
- Before your certificate expires you will receive an email that tells you it must be renewed.
- You will need your old certificate to sign the renewal.

Creating A Location in TQSL

- Before you can upload a signed log, you will need to create a location in TQSL.
- Start the TQSL program and select Station > Add Location.



Add Station Location 

Call Sign


DXCC Entity

Grid Square

ITU Zone


CQ Zone

IOTA ID

Add Station Location 

State

County

Add Station Location 

Station Data input complete

Select or enter name of this station location

Club Station (K9NCS)
Home (KC9GGV) (KC9GGV)

Station Location Name
Field Day (W9TE)

Signing a File

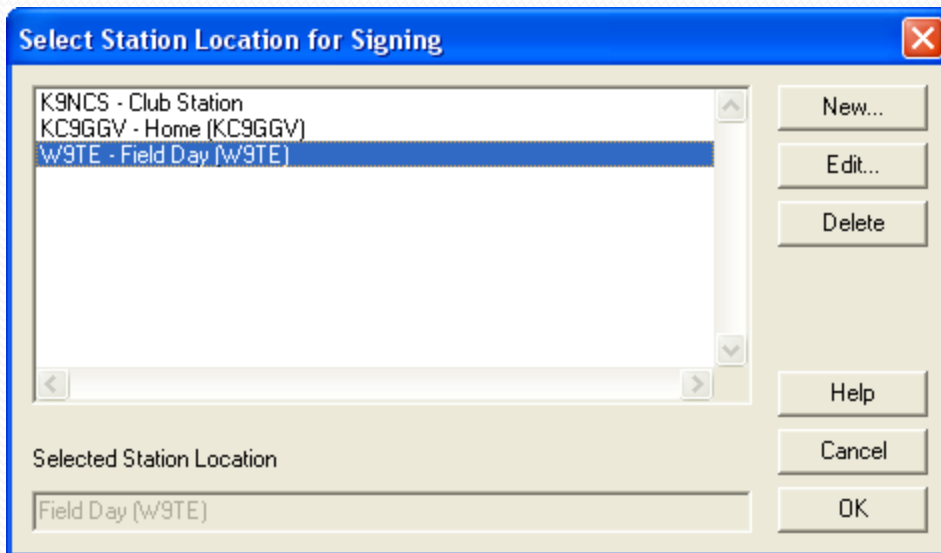
- Before you can upload a log to the LoTW it must be signed with your certificate.
- You will need a log file in ADIF or Cabrillo format exported from your logging software.
- Small logs can be manually created in TQSL if necessary. Manually input from a paper log for instance.
- Then start the TQSL software and pick your location file that corresponds to the log you will be uploading.
- File > Sign Existing ADIF or Cabrillo file...

Select Station Location for Signing

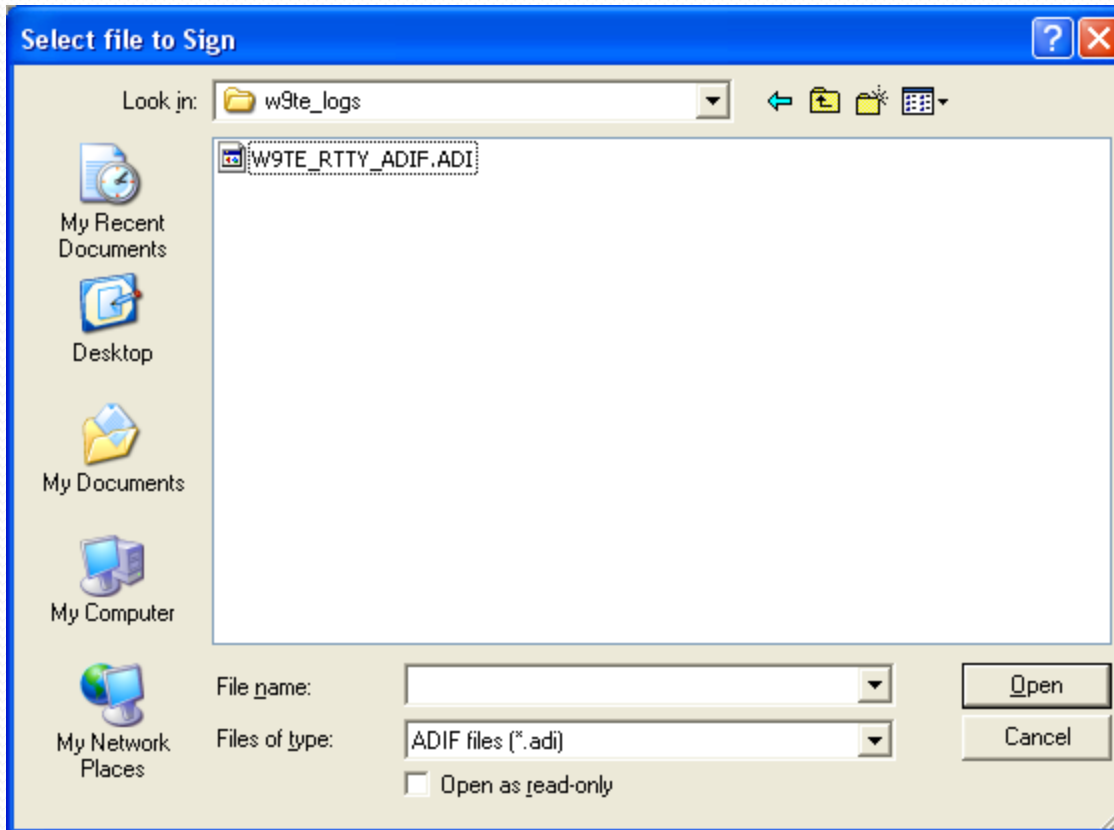
K9NCS - Club Station
KC9GGV - Home (KC9GGV)
W9TE - Field Day (W9TE)

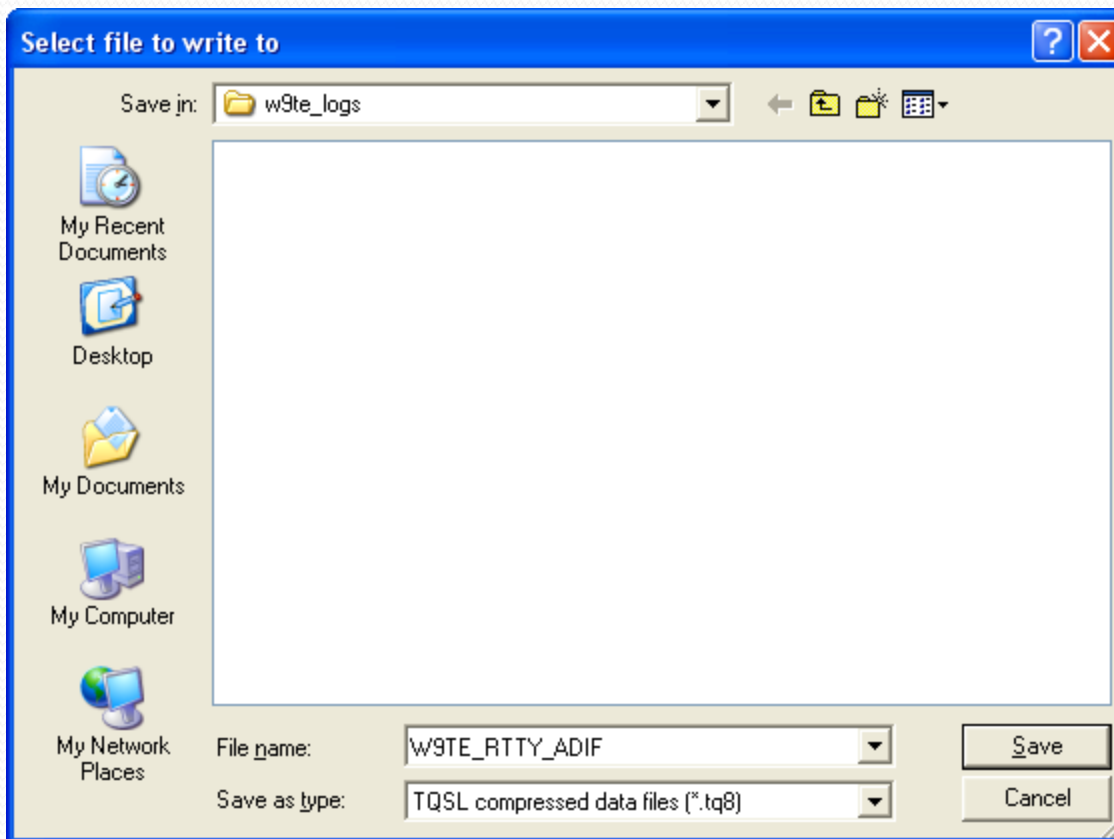
Selected Station Location

New...
Edit...
Delete
Help
Cancel
OK



Select OK





TQSL - Confirm signing

The file (F:\w9te_logs\W9TE_RTTY_ADIF.ADI) will be signed using:
Call sign: W9TE
DXCC: UNITED STATES OF AMERICA
Is this correct?

QSO Date Range



You may set the starting and/or ending QSO dates in order to select QSOs from the input file.

QSOs prior to the starting date or after the ending date will not be signed or included in the output file.

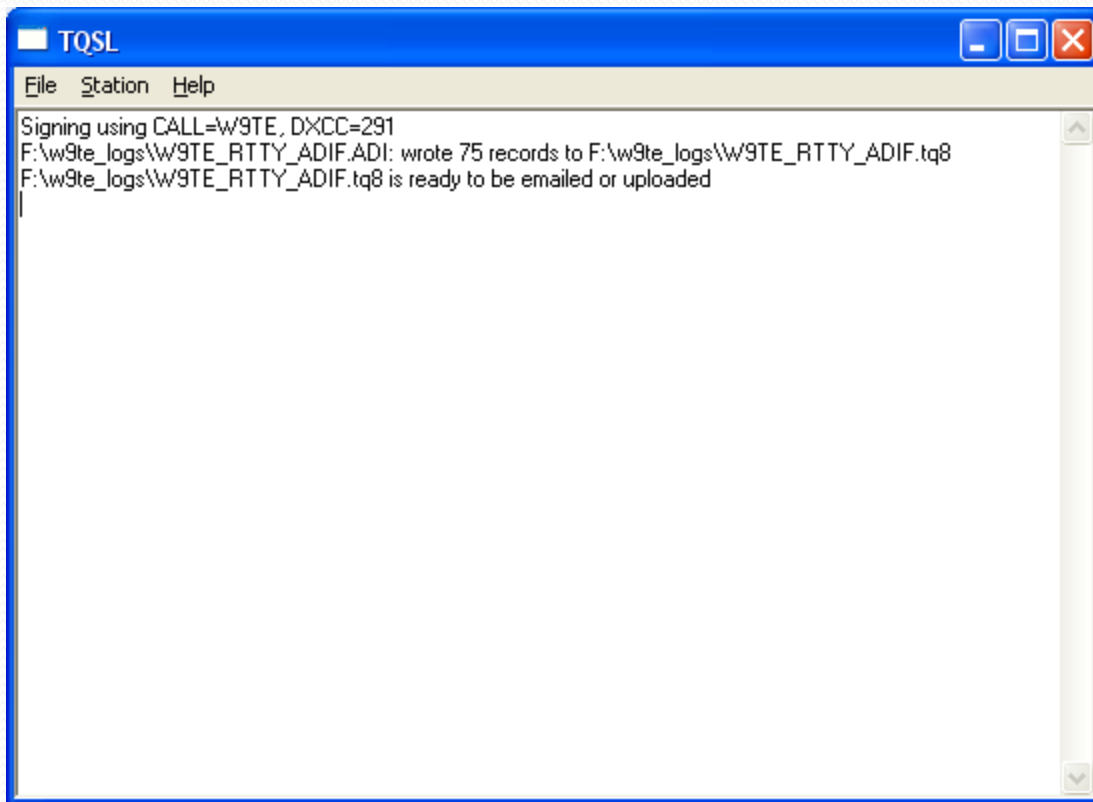
You may leave either date (or both dates) blank.

Start Date (YYYY-MM-DD)

End Date (YYYY-MM-DD)

Ok

Cancel



TQSL

File Station Help

Signing using CALL=W9TE, DXCC=291
F:\w9te_logs\W9TE_RTTY_ADIF.ADI: wrote 75 records to F:\w9te_logs\W9TE_RTTY_ADIF.tq8
F:\w9te_logs\W9TE_RTTY_ADIF.tq8 is ready to be emailed or uploaded

Upload or Email .tq8 File

- The next step is either upload your .tq8 file or email to the LoTW.
- Your .tq8 file is the signed data that will be used to match your QSO's to those uploaded by other members to generate a QSL if there is a corresponding match.

Summary

- I hope this has given everyone an overview of what the ARRL LoTW is and how to use it.
- If you really get stumped trying to use the system the folks at the ARRL are always there to answer your questions. You can send them an email or call them on the phone. Email: Lotw-help@arrl.org
- There is a lot of good info in the FAQ on the LoTW website and the answer to nearly all questions are probably on the website already.
- Questions?

THE
LOGBOOK



OF THE WORLD™