2020 DFW Metroplex NTS Functional Exercise

Player Handbook

November 7, 2020 | Version 1.0a

ARRL
North Texas Section
Amateur Radio in North Texas

DFW
METROPLEX
TRAFFIC NET

NTS
NATIONAL TRAFFIC SYSTEM
INNOVATION • PRIDE • SERVICE • TRADITION

2020 DFW METROPLEX
NTS FUNCTIONAL EXERCISE
PLAYER HANDBOOK

NOVEMBER 7, 2020 | Version 1.0a

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Introduction

National Traffic System background

The ARRL National Traffic System (NTS) is a network of amateur radio operators who move information during disasters and other emergencies. When areas are hit by large-scale events, such as hurricanes, earthquakes, landslides, or infrastructure failures that impact communications, amateur radio operators can set up equipment in the affected area to restore communications and enable relaying information into and out of the affected area. Whether by throwing an antenna wire into a tree, setting up an amateur radio station in a vehicle, or bringing in a portable repeater setup, amateur radio allows for communicating across town, across the country, and around the world.

The National Traffic System provides an organized method for moving messages related to the event. Called traffic, these messages can provide information critical for saving lives or property, as well as inquiring about the health or welfare of those affected. Messages are composed using the radiogram format, and these radiograms are moved, or relayed, into and out of the affected area. This is the Relay in American Radio Relay League: traffic is relayed from one location to another.

Functional exercise purpose

A functional exercise provides a way to evaluate capabilities and multiple functions using a simulated response.

This exercise will help with evaluating system readiness and allow traffic handling stations to practice their skills in a simulated real-world scenario. It is being executed by the DFW Metroplex Traffic Net managers and the ARRL North Texas Section Traffic Manager as part of evaluating NTS readiness during a major event.

Player handbook purpose

This *2020 DFW Metroplex NTS Functional Exercise Player Handbook* provides exercise participants with information to help you participate effectively in this functional exercise. If you have any questions, you are encouraged to seek clarification prior to the exercise taking place.

Exercise scope

In scope

This exercise will take place across the Dallas/Fort Worth Metroplex over a dedicated time period, with specific instructions for traffic handlers, net control stations, net managers, and Official Relay Stations to follow to:

- facilitate a realistic yet simulated scenario in a synchronized manner,
- coordinate data collection and reporting, and
- develop an after-action report with recommendations on how to improve.

This functional exercise is open to any station proficient with traffic handling within the DFW Metroplex Traffic Net service area which includes these North Texas counties:

- Collin
- Cooke
- Dallas
- Denton
- Ellis
- Hood
- Jack
- Johnson
- Kaufman
- Montague
- Parker
- Rockwall
- Tarrant
- Wise

This area, shown in Figure 1 below, includes area codes 214, 469, 682, 817, and 972, as well as area code 940 in Jack, Montague, and Wise counties.

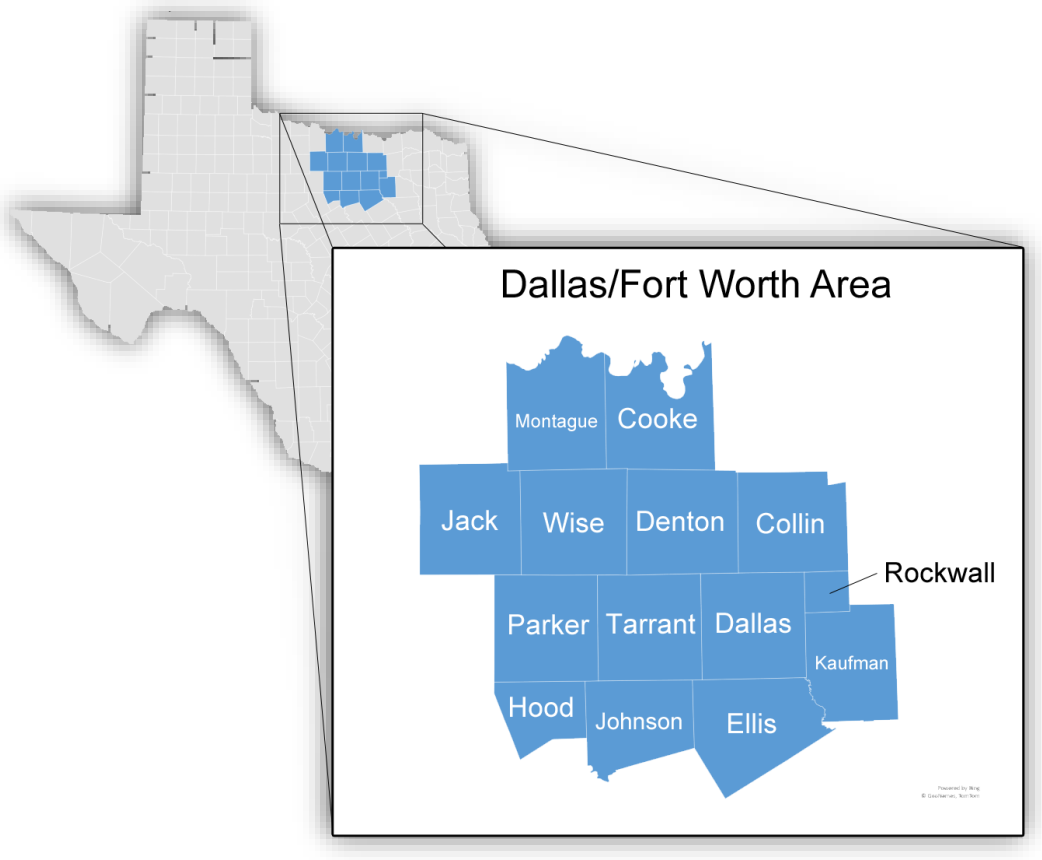


Figure 1 - Map of counties served by the DFW Metroplex Traffic Net, and are in scope for this exercise.

Out of scope

For the purposes of the 2020 DFW Metroplex NTS Functional Exercise, the Amateur Radio Emergency Service® (ARES®), Radio Amateur Civil Emergency Service (RACES), and other public service programs may participate by introducing exercise traffic at the individual amateur radio station level, but there is no request being made to activate these teams. There is also no request to involve Emergency Operation Centers, emergency managers, government officials, or other personnel/teams commonly involved in emergency response as this exercise is specifically measuring amateur radio operations with respect to originating, relaying, and delivering traffic.

Also, while Winlink provides functionality to introduce or relay radiograms, this exercise is focused on traffic handler participation on the over-the-air traffic net. Accordingly, Winlink is not in scope for this exercise.

Exercise objectives

Ensure the safety of all participating

Stations are permitted, if desired, to participate in the test at home, at an outdoor remote location, or otherwise. Regardless of operating location, amateur radio operator safety is the number one priority, and no one participating in the Functional Exercise should perform any action outside of their capabilities, subject themselves to a dangerous situation, or otherwise jeopardize the safety of themselves or others.

Assess the ability of the NTS to respond and relay information across the Metroplex during a major event

Using predefined radiogram text content, stations will relay situational reports to a simulated Emergency Operations Center liaison station to create a breadth of traffic travelling various distances across the Metroplex. Information will be logged for a post-exercise review to measure relay efficiency and identify opportunities to improve the system.

Responsibility of stations originating/injecting traffic

Those stations introducing traffic into the NTS shall turn in copies of their radiograms, including the header, addressee, text, signature, and sent tracking info. This information must be reported within three days of the end of the exercise. It will be used to verify that traffic received at the destination matches what was introduced into the system, as well as follow how, at the end of an event, stations will highly likely be asked to turn in copies of all radiograms they handle.

Responsibility of stations relaying traffic

Stations relaying traffic from one traffic handler to another are also required to turn in copies of their radiograms, including the header, addressee, text, signature, and received and sent tracking info. This information must be reported within three days of the end of the exercise. It will be used to understand how traffic received at the destination was relayed through traffic handlers, as well as follow how, at the end of an event, stations will highly likely be asked to turn in copies of all radiograms they handle.

As part of the test, traffic must be routed to its destination station completely through traffic systems. Phone and email delivery are not permitted for exercise-related traffic.

Responsibility of stations receiving delivered traffic

Stations receiving delivered traffic shall turn in copies of their radiograms, including the header, addressee, text, signature, and received tracking info. This information must be reported within three days of the end of the exercise. It will be used to understand what traffic was successfully delivered and measure delivery times, and also understand what, if any, traffic did not reach its destination or if it was somehow altered in transit.

Responsibility of net managers overseeing traffic nets

Net managers and/or their assigns shall monitor their traffic net to document any key events, learnings, or other takeaways related to the exercise to help improve the system. This information is important for understanding the exercise flow and compiling lessons and recommendations in the after action report. Ideally, net managers and assigns should participate as observers to monitor the exercise and take notes of key activities, and try to avoid directly introducing or relaying traffic so that their focus remains on

observing and documenting. This information must be recorded and submitted within three days of the end of the exercise.

Responsibility of the Section Traffic Manager

The Section Traffic Manager shall act as the simulation Emergency Operations Center and take all exercise traffic.

After the exercise concludes, the Section Traffic Manager shall hold a hot wash to debrief and discuss how the exercise went, listen to immediate feedback, and answer any immediate questions. Holding this discussion shortly after the exercise helps with reviewing information while it is fresh in mind, and enables information and best-practice sharing amongst traffic handlers, net managers, Official Relay Stations, and Section leadership.

The Section Traffic Manager will then coordinate with net managers to review exercise documentation, observations, and feedback to determine takeaways and compile an after action report.

Safety during the exercise

Safety is the number one priority during this exercise, and this includes ensuring that exercise traffic is not misunderstood to be real-world traffic. Regularly throughout the exercise, participating stations shall use the phrase, “This is an exercise,” or similar to confirm that communications are part of the exercise rather than a real-world emergency. Traffic relayed will have TEST as part of the precedence and include the word EXERCISE at the beginning and end of the text section.

Real-world emergency during the exercise

If you have a real-world emergency at any time during the exercise, break into the net using the prowords BREAK BREAK followed by your callsign and the words, “real-world emergency.” All other exercise communications will cease until the emergency is resolved.

Scenario

Information in the Functional Exercise Incident Briefing and Incident Action Plan (IAP) document available at https://www.dfwtrafficnet.org/2020-functional-exercise/ outlines the scenario:

> *Cellular service for all major carriers (Verizon, AT&T, T-Mobile) went offline at 08:35 CST on November 7, 2020 after an underground major fiber circuit was cut by a construction crew. This caused all cellular service throughout the Dallas/Fort Worth area to fail, meaning voice, text, and data are not working. Cell phone users are not able to reach 911 or otherwise contact emergency services.*

To help understand the scope of impact, stations participating in the traffic system are asked provide situational reports regarding local cellular network status, specifically which carrier their cell phone is using and whether their cellular service is working at their location.

Exercise assumptions

Stations and traffic net control stations follow their established protocols/procedures

With the exception of standing up an out-of-band traffic net for the purposes of this exercise, existing protocols and procedures should be followed, including regular net control practices, traffic handling procedures, and traffic logging. Additional logging may be required by exercise participants, which is outlined in the Reporting section below.

Traffic is only relayed via the traffic system

In order to fully test the system, traffic must be routed through the traffic system all the way through to its destination. **Delivery by phone or email are not permitted for exercise-related traffic** as we are measuring the system's ability to fully relay traffic during a communications system failure. For example, we would not want traffic originating from Sanger to relay through to Lewisville and then be delivered by phone or email to its destination in Dallas. In order to maintain integrity in delivery information related to this exercise, we must relay traffic fully to its destination station, and not use phone or email.

Echolink, AllStar, or other options that are not over the air are not permitted for relaying traffic. For this exercise, radiogram traffic via Winlink, even if relayed over the air, is also not permitted as the focus is having traffic handlers check in and relay their traffic on the repeater-based traffic net.

Repeater owners/operators support local traffic nets during the exercise

Local traffic nets taking place on local repeaters will need repeater owners/operators to sign off regarding operating any traffic nets outside of their regularly scheduled times, whether at a dedicated exercise net time, and/or if an existing scheduled net runs longer due to increased traffic counts.

Participants are familiar with participating in a traffic net and the radiogram format

While one of the goals of the traffic system is to help new stations learn about and build their traffic handling skills, during an incident or exercise it is not possible to provide this training and feedback. All efforts are focused on the matter at hand, and participants should prepare beforehand if they want to participate in the exercise.

Participants and observers will turn in post-exercise reports within a timely manner

A key objective of this exercise is measuring traffic transit times and confirming deliveries which can only occur if participating stations turn in their appropriate reports within three days of the end of the exercise.

Exercise flow

Timeline and communications

The exercise will take place on Saturday November 7, 2020 from 10:00 am to 2:00 pm local time. At 10:00 am on the WA5CKF repeaters in Irving, a net control station will start a traffic net to relay exercise-related traffic. The Simulation Emergency Operations Center will check into this net to accept traffic from participating stations.

WA5CKF repeater information

All 3 repeaters are linked.

2 meters	**1.25 meters**	**70 centimeters**
146.72 MHz	224.40 MHz	442.675 MHz
Negative offset (-600 kHz)	Negative offset (-1.6 MHz)	Positive offset (+5 MHz)
PL Tone 110.9	No PL Tone	PL Tone 110.9

More information about this repeater system available at https://irvingarc.org/.

Exercise traffic

For this exercise we will assess current cellular phone status at station locations. Stations should generally expect to relay their traffic directly to the Simulation Emergency Operations Center during the exercise traffic net. Traffic introduced must use precedence “TEST PRIORITY” and provide a situation report on local cell phone service using the following format:

EXERCISE **<CITY> <TIME OBSERVED> <CELL PROVIDER> <SERVICE STATUS>** EXERCISE

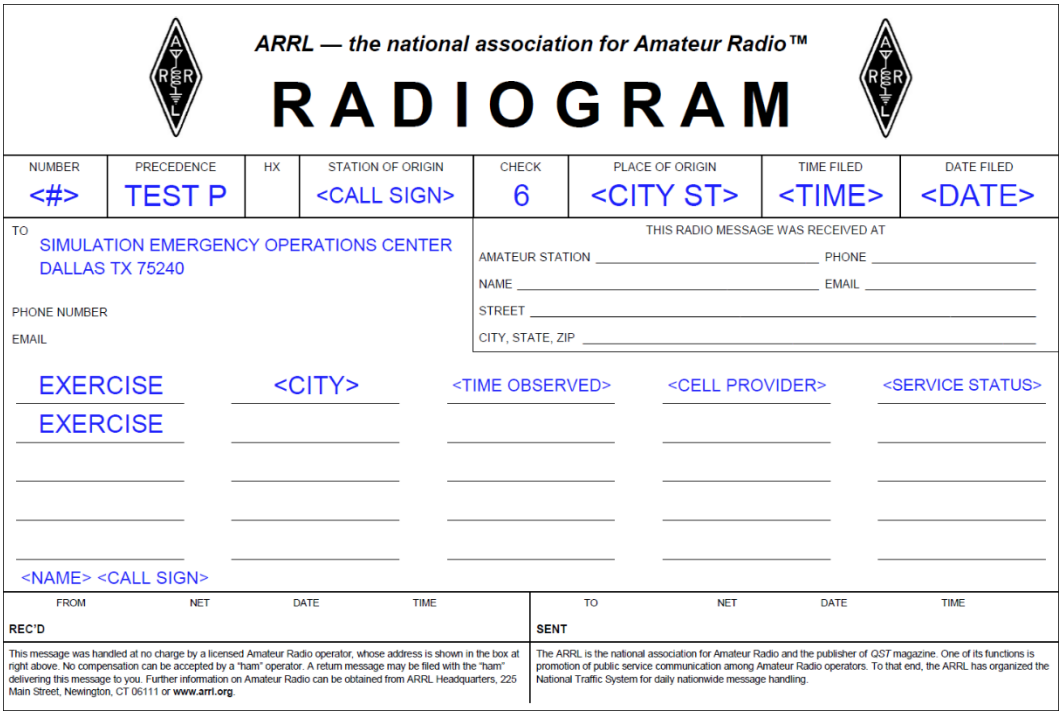
where

- <CITY> is the traffic handler’s reporting location
  - Cities with multiple words should use multiple groups (spaces) on the radiogram
- <TIME OBSERVED> is the time in 24-hour format LOCAL that you assessed your cell provider’s service status
- <CELL PROVIDER> indicates the traffic handler’s cellular service
  - VERIZON, ATT, TMOBILE, or OTHER if you are using a different provider
- <SERVICE STATUS> is the true assessment of the traffic handler’s current cellular service
  - WORKING if voice, text, and data are working, or INOPERATIVE if any or all of those items are not working

Please do not use fictitious information during this exercise; even with "EXERCISE" in the text and precedence “TEST PRIORITY” we do not want to inadvertently cause confusion from our exercise traffic.

Example radiograms

Here is an example radiogram showing the traffic framework outlined above where the city name only uses one group (blank) on the radiogram.



ARRL — the national association for Amateur Radio™

RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE FILED
<#>	TEST P		<CALL SIGN>	6	<CITY ST>	<TIME>	<DATE>

TO
SIMULATION EMERGENCY OPERATIONS CENTER
DALLAS TX 75240

PHONE NUMBER

EMAIL

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION _____ PHONE _____

NAME _____ EMAIL _____

STREET _____

CITY, STATE, ZIP _____

EXERCISE	<CITY>	<TIME OBSERVED>	<CELL PROVIDER>	<SERVICE STATUS>
EXERCISE				

<NAME> <CALL SIGN>

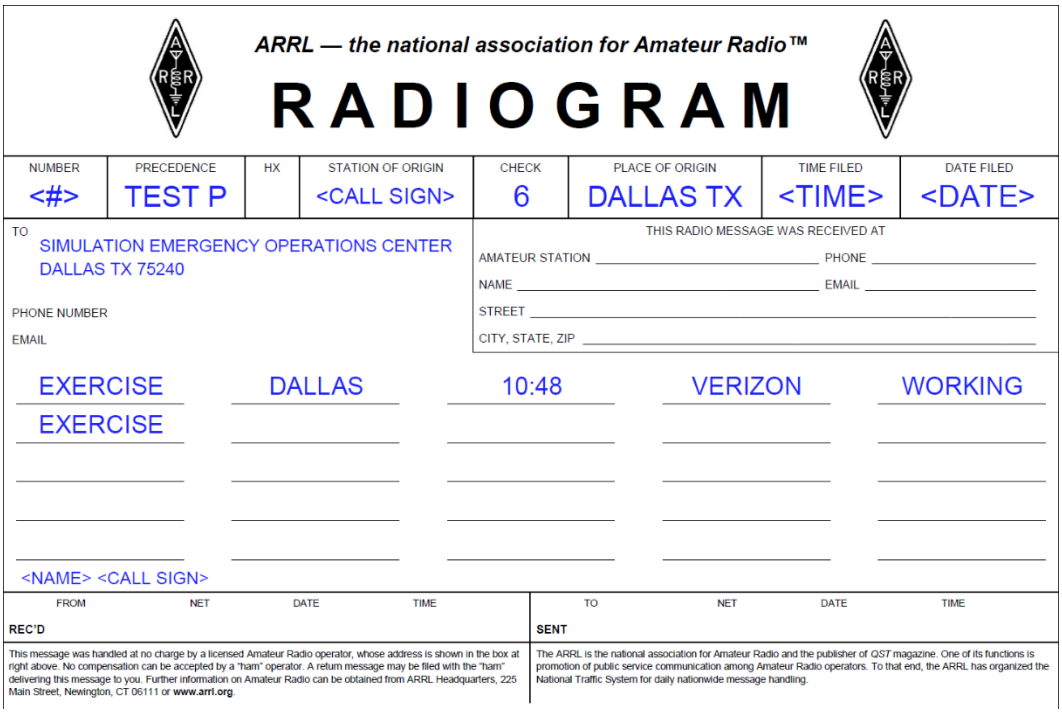
FROM	NET	DATE	TIME	TO	NET	DATE	TIME
REC'D				SENT			

This message was handled at no charge by a licensed Amateur Radio operator, whose address is shown in the box at right above. No compensation can be accepted by a "ham" operator. A return message may be filed with the "ham" delivering this message to you. Further information on Amateur Radio can be obtained from ARRL Headquarters, 225 Main Street, Newington, CT 06111 or **www.arrl.org**.

The ARRL is the national association for Amateur Radio and the publisher of *QST* magazine. One of its functions is promotion of public service communication among Amateur Radio operators. To that end, the ARRL has organized the National Traffic System for daily nationwide message handling.

Figure 2 - Radiogram traffic during this exercise should follow this framework.

For example, if traffic from a Dallas station with cellular provider VERIZON has fully working service at 10:48 am local time, the radiogram will appear as shown here:



ARRL — the national association for Amateur Radio™

RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE FILED
<#>	TEST P		<CALL SIGN>	6	DALLAS TX	<TIME>	<DATE>

TO
SIMULATION EMERGENCY OPERATIONS CENTER
DALLAS TX 75240

PHONE NUMBER

EMAIL

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION _____ PHONE _____

NAME _____ EMAIL _____

STREET _____

CITY, STATE, ZIP _____

EXERCISE	DALLAS	10:48	VERIZON	WORKING
EXERCISE				

<NAME> <CALL SIGN>

FROM	NET	DATE	TIME	TO	NET	DATE	TIME
REC'D				SENT			

This message was handled at no charge by a licensed Amateur Radio operator, whose address is shown in the box at right above. No compensation can be accepted by a "ham" operator. A return message may be filed with the "ham" delivering this message to you. Further information on Amateur Radio can be obtained from ARRL Headquarters, 225 Main Street, Newington, CT 06111 or **www.arrl.org**.

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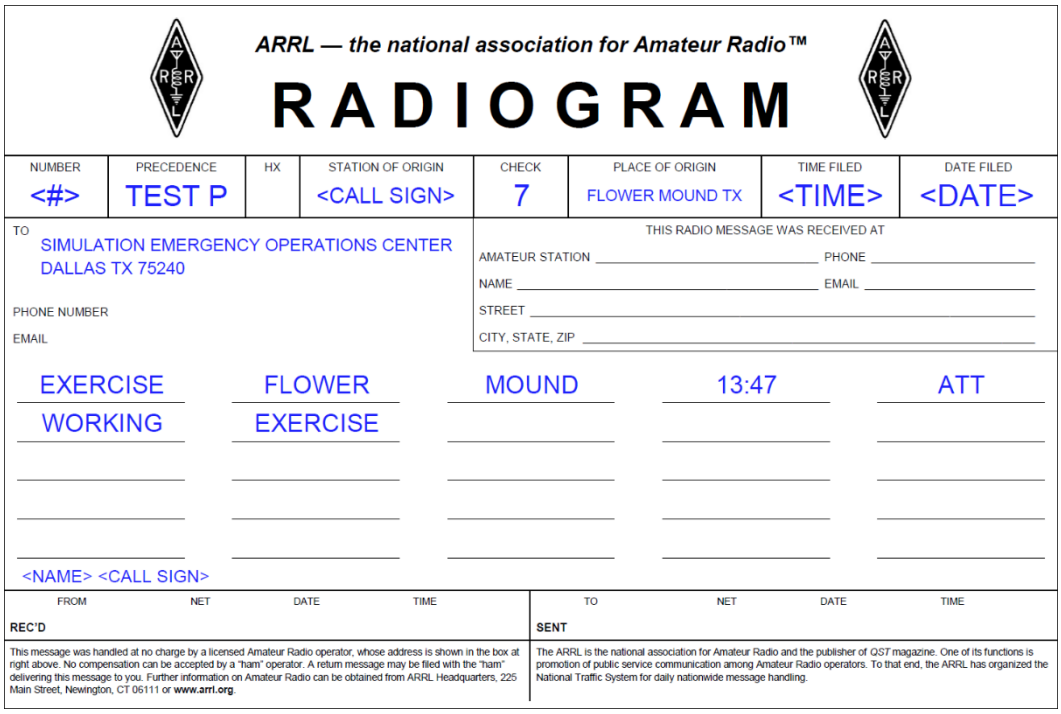
Figure 3 - Example exercise radiogram traffic from Dallas.

This next example shows traffic from a Flower Mound station with cellular provider ATT and fully working service at 1:47 pm local time.



ARRL — the national association for Amateur Radio™

RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE FILED
<#>	TEST P		<CALL SIGN>	7	FLOWER MOUND TX	<TIME>	<DATE>

TO
SIMULATION EMERGENCY OPERATIONS CENTER
DALLAS TX 75240

PHONE NUMBER

EMAIL

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION _____ PHONE _____

NAME _____ EMAIL _____

STREET _____

CITY, STATE, ZIP _____

EXERCISE	FLOWER	MOUND	13:47	ATT
WORKING	EXERCISE			

<NAME> <CALL SIGN>

FROM	NET	DATE	TIME	TO	NET	DATE	TIME
REC'D				SENT			

This message was handled at no charge by a licensed Amateur Radio operator, whose address is shown in the box at right above. No compensation can be accepted by a "ham" operator. A return message may be filed with the "ham" delivering this message to you. Further information on Amateur Radio can be obtained from ARRL Headquarters, 225 Main Street, Newington, CT 06111 or **www.arrl.org**.

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Figure 4 - Example exercise radiogram traffic from Flower Mound.

Reporting and hot wash

During the exercise

A real-time exercise dashboard will be available at https://www.dfwtrafficnet.org/exercise-dashboard/ which will provide:

- a summary of all situational reports received at the simulation Emergency Operations Center,
- maps reflecting working and inoperative situational reports by carrier and in aggregate, and
- tables listing situational reports by city, again by carrier and in aggregate.

While considerable effort was made to include all cities within the exercise area on these maps and tables, it is possible that some cities may not be listed. Traffic handlers should submit their reports using their current city, regardless of whether or not it is shown on these maps or charts.

After the exercise

At the conclusion of the exercise, participants must submit reports within three days to allow for a post-exercise review and creation of an after action report. It is recommended that stations not wait to submit any reports or feedback.

It is preferred that participants and observers use provided online reporting tools. If stations prefer, hand-written documentation is acceptable as long as information is clearly printed and easily readable. Ideally, this would be scanned and emailed. If you are not able to submit your information electronically, please contact the net managers and the Section Traffic Manager to discuss options.

Hot wash

The Section Traffic Manager will host a hot wash immediately after the exercise ends via the Zoom conferencing platform. Attendance is required for all net managers, net control stations, and Official Relay Stations participating in the exercise, and optional for all other participants and observers. Because the conference can only support up to 100 attendees, required attendees will be allowed to join first. While the hot wash will be recorded so that the net managers and Section Traffic Manager can review the discussion, this recording will not be made available publicly. A link to this conference will be available approximately 15 minutes after the exercise ends at https://www.dfwtrafficnet.org/2020-functional-exercise/ and an announcement will be made on the WA5CKF repeaters when it is posted.

General feedback

Everyone participating in or observing the exercise is welcome to provide feedback. You can use this Google form to provide your feedback within 3 days of the end of the exercise. You may provide your contact information if you wish to discuss your feedback further, but know that providing your information is optional.

Traffic handler radiogram reporting

Traffic handlers are requested to turn in copies of the radiograms they handled during the exercise, including radiogram they originated (created). You can submit this information electronically via this Google form within 3 days of the end of the exercise. If you need to submit scanned or physical copies, or need a different way to submit these copies, please reach out to the net managers and/or the Section Traffic Manager.

Note: Exercise test messages count for Station Activity Reports and Public Service Honor Roll purposes, and time spent participating in traffic nets as part of the exercise count towards Public Service Honor Roll Category 4.

Net control station reports

In additional to the normal net report string, net control stations should provide the callsign of stations checking in and how many pieces of traffic each station relayed using this format:

> DFW EXERCISE 11/7/<CHECK_INS>/<TOTAL_QTC>/<LENGTH> <CALLSIGN>/<QTC> <CALLSIGN>/<QTC> <CALLSIGN>/<QTC> …

You can provide your report during traffic nets like any other net report as long as you can provide them within 3 days of the end of the exercise. Otherwise, please email your report to Sean AA5SA directly.

Questions and contacts

Questions about this exercise should be directed to the net managers and the Section Traffic Manager.

Important websites

- **DFW Metroplex Traffic Net**
  Provides information about the traffic net, resources to learn about the radiogram format and traffic handling, and more
  https://www.dfwtrafficnet.org
- **Exercise resource page**
  The main exercise page which provides links to reporting forms and exercise documentation
  https://www.dfwtrafficnet.org/2020-functional-exercise/
- **Exercise dashboard**
  Provides real-time information about situational reports received during the exercise
  https://www.dfwtrafficnet.org/exercise-dashboard/

Administrative details

This exercise is being executed by the DFW Metroplex Traffic Net managers and the ARRL North Texas Section Traffic Manager.

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Appendix

Exercise announcement

Here is a suggested way to announce this exercise at various amateur radio nets around the Metroplex.

The DFW Metroplex Traffic Net is holding an emergency communications exercise on Saturday November 7 from 10 am to 2 pm on the WA5CKF repeater system in Irving. This exercise will simulate a cellular network outage and a request from government officials for status reports. All amateur radio operators across the Metroplex are encouraged to learn about traffic handling and participate in the exercise. For more information visit dfwtrafficnet.org.

Net control station script

Preamble

Welcome to the DFW Metroplex Exercise Traffic Net. My name is (name), my callsign (callsign), and I will be your net control station. This net is a local affiliate of the ARRL's National Traffic System. This net has been called for the purpose of conducting a functional exercise.

This is a directed net; therefore, please do not transmit without direction from net control. We ask that you use ITU phonetics and please ID at the end of all transmissions. Stations with emergency or priority traffic may enter the net at any time using the pro words BREAK-BREAK, followed by their callsign. Are there any stations with emergency or priority traffic?

Pause for any stations with emergency or priority traffic.

Order of business

LIAISON CHECK-INS

- Alternate Net Control Station (ANC)
- Simulated EOC

STATIONS WITH TRAFFIC CHECK-INS

For this net, all stations checking in should have traffic. Take a list of check-ins from stations wishing to list traffic with the net, using callsigns only, and ITU phonetics only.

PERIODIC RE-ANNOUNCE

Throughout the net—at least once every ten minutes, re-announce the net as follows:

> This is <call sign> net control station, DFW Metroplex Traffic Net Exercise in progress.

Postamble

That will conclude this exercise. The Early edition of the traffic net will meet tonight at 18:30 on the W5FC repeater which is at 146.88 MHz with a PL tone of 110.9.

The Late edition of the traffic net will meet tonight at 22:30 on these repeaters with a different net control.

I would like to thank all stations for their participation, and thanks to the Irving Amateur Radio Club for the use of their repeaters, WA5CKF. This is (callsign) closing the net at (24-hour format time) and returning the repeater to normal amateur radio use.

Change log

Date	Version	Changes
30SEP2020	1.0	Initial document
06OCT2020	1.0a	Updated exercise announcement suggestion, exercise map; no other changes