Newcomers and Elmers Net: Directing Traffic   9-21-14

The National Traffic System (NTS) is a structure that allows for rapid movement of traffic from origin to destination and training amateur operators to handle written traffic and participate in directed nets. These two objectives, which sometimes conflict with each other, are the underlying foundations of the NTS.

NTS operates daily, even continuously with advanced digital links.

Organized flow of traffic on a national level; as well as local flow of traffic among local and regional nets

The National Traffic System is an organized effort to handle traffic in accordance with a plan which is easily understood, and employs modern methods of network traffic handling in general acceptance today.

One of the most important features of NTS is the system concept. No NTS net is an independent entity which can conduct its activities without concern for or consideration of other NTS nets. Each net performs its function and only its function in the overall organization. If nets fail to perform their functions or perform functions intended for other nets, the overall system may be adversely affected.

All of this structure and organizational emphasis does NOT mean you as a newcomer cannot be involved! It is only meant to stress there is a system and a structure in place which is designed to ensure timely flow of information during an emergency – something which may never happen, but for which we constantly train and simulate even with our day to day nets.

The National Traffic System is not dedicated specifically to any mode or to any type of emission, nor to the exclusion of any of them, but to the use of the best mode for whatever purpose is involved. The aim is to handle formal written traffic systematically, by whatever mode best suits the purpose at hand. Whether voice, CW, RTTY, AMTOR, packet or other digital mode is used for any specific purpose is up to the Net Manager or managers concerned and the dictates of logic. There is only one National Traffic System, not separate systems for each mode. Modes used should be in accordance with their respective merits, personnel availabilities and liaison practicalities. Whatever mode or modes are used, we all work together in a single and thoroughly integrated National Traffic System.

This means using various modes is not a measure of how cool we are, or showing off our equipment capabilities – we move traffic the best, most efficient way possible
-- while that may mean using digital modes, there must be a clear understanding that the mode is not the focus, but the message
-- circumstances may dictate moving from a digital mode to a voice mode to keep the flow of traffic – that's fine

The National Traffic System includes four different net levels which operate in an orderly time sequence to effect a definite flow pattern for traffic from origin to destination. A message flows through the National Traffic System in a manner similar to an airline passenger who starts out in a small residential town with a destination across the continent in another small town. He has to change planes several times in the process.

message starts with the originating station in a local net, is carried to the section net, the region net, the area net, via Transcontinental Corps (TCC) to a distant area net and then back down the line to delivery.

Of course the message, like the passenger, can "get on" or "get off" at any point if that's the origin or destination. Thus, a message from, say, New York to Detroit would never get on TCC, but would "get off" at area level.

2.1 Local Nets

Local nets are those which cover small areas such as a community, city, county or metropolitan area, not a complete ARRL section.

Local nets are intended mainly for local delivery of traffic, inasmuch as such delivery could ordinarily be effected conveniently by non-toll telephone. Some NTS local nets operate on a daily basis, just as do other nets of the system, to provide outlets for locally-originated traffic and to route the incoming traffic as closely as possible to its actual destination before delivery

Most local nets and even some section nets in smaller sections use repeaters
- Average coverage on VHF can be extended 10x or more using a strategically located repeater, and this can allow for a local coverage area wide enough to encompass many of the smaller sections.
-- Since propagation conditions on the high frequencies are erratic, more use of VHF and repeaters is recommended at local levels.

2.2 Section Nets
Organizational and procedural lines begin to tighten at the section net level. Coverage of the section may be accomplished either by individual stations

reporting in, by representatives of NTS local nets and nodes, or both. Ordinarily, all section amateurs are invited to take part; however, in a high-population section with several metropolitan areas covered by local nets, representation may be by such liaison stations plus individual stations in cities or towns not covered by local nets.

The purpose of the section net is to handle intra-section traffic, distribute traffic coming down from higher NTS echelons and put inter-section traffic in the hands of the amateur designated to report into the next-higher NTS (region) echelon.

2.3 Region Nets
Region nets cover a wider area, such as a call area. At this level the object is no longer mass coverage, but representation of each ARRL section within the region.
Participants normally include:
1. A net control station, designated by the region net manager.
2. Representatives from each of the various sections in the region, designated by their section net managers.
3. One or more stations designated by the region net manager to handle traffic going to points outside the region.
4. One or more stations bringing traffic down from higher NTS echelons.
5. Any other station with traffic.

The purpose of the region net is to exchange traffic among the sections in the region, put out-of-region traffic in the hands of stations designated to handle it and distribute traffic coming to the region from outside among the section representatives. Region nets are administered by managers who are elected by NTS Area Staff members.

2.4 Area Nets
At the top level of NTS nets is the area net. In general, the area net is to the region net what the region net is to the section net; that is, participation at area level includes:
1. A net control station, designated by the area net manager.
2. One or more representatives from each region net in the area, designated by the region net managers.
3. TCC stations designated to handle traffic going to other areas.
4. TCC stations designated to bring traffic from other areas.
5. Any station with traffic.
Points (3) and (4) are functions of the Transcontinental Corps. There are three areas, designated Eastern, Central and Pacific, the names roughly indicating their coverage of the U.S. and Canada, except that the Pacific

Area includes the Mountain as well as the Pacific time zones. Area nets are administered by managers who are elected by NTS Area Staff members.

.5 Transcontinental Corps

The handling of inter-area traffic is accomplished through the facilities of the TCC. This is not a net, but a group of designated stations who have the responsibility for seeing that inter-area traffic reaches its destination area. TCC is administered by TCC directors, or as delegated to the Area Digital Coordinator, in each area who assign stations to report into area nets for the purpose of "clearing" inter-area traffic, and to keep out-of-net schedules with each other for the purpose of transferring traffic from one area to another.

Whenever changes from normal routings and sequences are made, the appropriate Area Staff Chairs and Headquarters should be notified so that accurate net information will be available at a centralized point. In NTS, the right hand should always know what the left hand is doing. No NTS net should consider itself independent of or unconcerned with the functioning of other parts of the system.

3.3 Deviation from Normal Routing

Failure to use the normal routings described above, if carried to the extreme, will result in "strangulation" of one or more NTS nets at region or area level. That is, if section nets send representatives to other section nets to clear traffic direct instead of through the region net, the region net will "starve" for traffic.

Similarly, if region nets maintain liaison with each other direct instead of through the common medium of the area net, the latter will have little traffic and will not prosper. It is in the interest of efficiency, organization, system, training and conservation of skilled personnel to use the NTS structure as it is intended to be used. [Let's not be ridiculous, however. Those who would follow the system to the letter are occasionally guilty only of unnecessarily delaying delivery.]

Any station in NTS, regardless of the function the operator performs, who receives a message destined to a point in his local calling area, should deliver that message rather than filter it further through the system.
Operation During Disasters

The National Traffic System is dedicated to communications during disasters on behalf of ARES, as well as the daily handling of third-party traffic. When a disaster situation arises, NTS is capable of expanding its cyclic operation into complete or partial disaster operation depending entirely on the extent of the disaster situation and the extent of its effect. The normal cycles may be expanded as required by the situation, so that more traffic can be handled and so that it can be handled more rapidly.

One of the biggest problems in a disaster is the handling of so-called "health and welfare" traffic or "disaster welfare inquiries." The ARRL-recommended precedence for this type of traffic is W or "Welfare," and refers to either an inquiry as to the health and welfare of an individual in the disaster area or an advisory from the disaster area that indicates all is well. The influx of W traffic into the disaster area may be large, and NTS may be called upon to assist with this overload.

The NTS policy with respect to the handling of W traffic is to handle as much of it as possible, but to adhere to its precedence. Higher-precedence traffic must be handled first, W traffic only when the circuit is free. Routine (R) traffic is not normally handled by an NTS net operating under disaster conditions, because usually they more than have their hands full with higher precedence, but should a disaster circuit be temporarily available, there is no reason why it cannot be handled until the circuit again becomes occupied with higher-precedence traffic.

In a widespread disaster situation, it is seldom possible to handle all the Welfare traffic with efficiency and dispatch.

Handling Instructions
All messages handled by Amateur Radio should contain precedences -- that is, an evaluation of each message's importance, made by the originating station. A precedence is an "order of handling." There are four precedences in the ARRL message form: Emergency, Priority (P), Welfare (W) and Routine (R), in that order of handling. When and as they appear on a net or any other kind of circuit, messages will be handled in this order.

The public and our served agencies appreciate our ability to send formal written message traffic efficiently and accurately. When we combine our

traffic handling, radio and net operating skills to provide professional service we earn their trust.

The process is simple, yet there are details to learn about how to make it all happen efficiently and with precision. We must interface with those we serve and gather the information required to prepare the message in the proper format. We must be skilled at exchanging the message with another station to pass it along, and be able to participate in and run organized nets to efficiently handle large amounts of message traffic. We must know how to deliver the message to the addressee, and create a reply or a service message back to the originator when required.

Most of this material comes from the ARRL Website at:
http://www.arrl.org/chapter-one-national-traffic-system