

Chapter 2

# NBC Warning and Reporting System

The primary means of warning units of an actual or predicted nuclear hazard is the NBCWRS. It is a key in limiting the effects of nuclear attacks. The NBCWRS allows units to determine required protective measures and plan operations. Units take action depending on the mission

and type of hazard present. If the mission allows, affected units alter plans to avoid the hazard. Otherwise, the units upgrade protective measures and occupy or cross the hazard area. Units use the NBCWRS as battlefield intelligence.

## Standard NBC Reports

The NBCWRS, to support radiological defense, consists of five reports. Each is standardized by ATP 45/STANAG 2103 and the US Message Text Format (USMTF). The United States and its NATO, British, Canadian, and Australian (ABCA) allies use the same message formats.

This improves the accuracy, comprehension, and interoperability of the system. It also increases the speed of dissemination and submission. The five standard reports used to exchange information are—

- NBC 1—initial report, giving basic data compiled at unit level.
- NBC 2—Report used for passing evaluated data.
- NBC 3—Report used for immediate warning of predicted contamination and hazard areas.
- NBC 4—Report used for passing monitoring and survey results.
- NBC 5—Report used for passing information on areas of actual contamination.

The reports use standard formats to shorten the message being passed. The warning and reporting system is based on a code letter system. The meaning and use of each letter used to transmit an NBC message is described in Table 2-1. The following paragraphs describe each report. Specific instructions

**Table 2-1. Meaning of line items in NBC reports.**

Line	Nuclear	Remarks
A	Strike serial number	Assigned by NBC center
B	Position of observer	Use coordinates Universe transverse mercator (UTM or place)
C	Direction of attack from observer, to include unit of measure	Deg magnetic north (DGM) or mils (MLM) Deg true north (DGT) or mils (MLT) Deg grid north (DGG) or mils (MLG)
D	Date-time of detonation	Use Zulu time.
E	NA	
F	Location of area attacked	Use grid coordinates (or place). State whether the location is actual or estimated.
G	Suspected or observed event and means of delivery or kind of attack	State whether attack was by artillery, mortars, rockets, missiles, or bombs.
H	Type of burst	Specify air, surface, subsurface or unknown.
I	NA	
J	Flash-to-bang time	Use seconds.

—Continued

## NBC 1 Report

The NBC 1 report is the most widely used report. The observing unit uses this report to provide nuclear attack

data. All units must be completely familiar with the NBC 1 report format and its information. The unit must prepare this report quickly and accurately, and send it to the next higher-headquarters.

**Table 2-1 continued.**

Line	Nuclear	Remarks
K	Presence or absence of crater and diameter.	Send in meters.
L	Cloud width at H + 5 minutes	State whether measured in degrees or mils.
M	Stabilized cloud top or cloud bottom angle or cloud top or bottom height at H + 10 minutes.	State whether angle is cloud top or cloud bottom and whether measured in degrees or mils. State whether height is cloud top or cloud bottom and whether measured in meters or feet.
N	Estimated yield	Send as KT.
O	Reference date-time for estimated contour line when not H + 1 minute.	Used when contours are plotted at other than at H + 1 minute.
P	Radar purposes only. PA—Coordinates of points to outline external contours of cloud. PB—Downwind direction of radioactive cloud in degrees or mils.	
PAR	Coordinates of external contours of radioactive cloud.	Six-digit coordinates. Letter R identifies RADAR set.
PBR	Downwind direction of radioactive cloud and unit of measure.	Deg magnetic north (DGM) or mils (MLM) Deg true north (DGT) or mils (MLT) Deg grid north (DGG) or mils (MLG). Letter R identifies RADAR set.
Q	Location of reading	UTM or place
R	Dose rate or actual value of decay exponent.	State dose rate in cGyph. See sample NBC 4 for terms associated with this line.
S	Date-time group of reading	State time initial identification test sample or reading was taken.
T	H + 1 date-time group	NBC 5
U	1,000-cGyph contour line	Plot in red.
V	300-cGyph contour line	Plot in green.
W	100-cGyph contour line	Plot in blue.

—Continued

Battalion and higher elements decide which NBC 1 reports to forward to the next higher headquarters. If several reports are received on the same nuclear attack, then a consolidated NBC 1 report is forwarded, instead of separate reports. This reduces the number of reports to a manageable level. NBC 1 reports are not routinely passed to corps or higher NBC centers (NBCC) except for the initial use report. Precedence of the NBC 1 report depends on whether or not it is an initial report. The initial use report is FLASH precedence, all others are IMMEDIATE precedence.

Individuals identified by unit SOP submit raw data to the unit NBC defense team at company/battery or troop level. NBC 1 format should be used. However a Size, Activity, Location, Unit, Time, Equipment (SALUTE) or Spot report may also be used. And should be submitted to the unit's NBC defense team. The unit NBC defense team normally consists of the unit chemical NBC NCO (54B20) or an NCO that has been school trained at an area NBC defense two-week school, an officer and an enlisted soldier (corporal or above) who has attended the same two-week school. These soldiers will have the special duties at unit level of advising the commander on NBC defense matters and formatting NBC reports.

Normally, the unit NBC defense team checks NBC 1 reports. This ensures that the content of the report is known to the commander or his or her representative. It also ensures that the report is in the proper format and is as correct as possible.

All data observations are sent in a single, complete NBC 1 report. Do not divide data into two parts to create a subsequent report. NBC 1 reports are not used as attack notification. They simply pass data. Separate procedures must be developed for attack notification and are beyond the scope of this manual. Attack notification may take the form of a SALUTE, Spot, or Situation Report (SITREP) report and should be addressed in detail in unit standing operating procedures (SOPs.)

The first time a nuclear weapon is used against US forces, the designated unit will send the NBC 1 report with a FLASH precedence. Each intermediate headquarters will forward the report with a FLASH precedence (or IMMEDIATE precedence, if a previous NBC 1 report has been forwarded). For the first NBC 1 nuclear report in the brigade, use FLASH precedence. If the report is of a second attack within the division, use IMMEDIATE.

The observer determines the date-time of attack, flash-to-bang time, illumination time, type of burst, location of (GZ) or azimuth to attack, and stabilized nuclear cloud measurements. Under conditions of limited visibility, the observer determines illumination time. Chapter 3 lists equipment needed to make necessary observer calculations.

Personnel qualified to operate this equipment gather data, such as azimuth to the attack from the observer, observer location, and cloud width at H+ 5 minutes, or cloud top/bottom angle at H+ 10 minutes. Aerial observers report cloud top/bottom height at H+ 10 minutes. If such equipment is not available to the unit, use the lensatic compass to take measurements as accurately as possible.

If the unit is a designated observer unit, it may submit a subsequent NBC 1 nuclear report if new data concerning actual GZ location or the presence or absence of a crater is obtained. Nondesignated observer units should not submit subsequent reports unless requested. By choosing designated observer units, the NBCC can limit the number of reports and ensure the accuracy of the reports received.

Electromagnetic puke (EMP), transient radiation effects on electronics (TREE), blackout, and an active enemy electronic warfare threat will also take their toll on our communications systems. NBC 1 reports will have to compete with urgent requests for status and damage information from the affected and nearby areas.

All reports from ground observers must contain line items Bravo (position of observer), Delta (date-time group), Hotel (type of burst), and either Charlie (direction of attack) or Foxtrot (actual or estimated location of attack). If line item Lima (cloud width) is reported, the report must contain line items Bravo and either Charlie or Foxtrot.

All reports from aerial observers must contain line items Bravo (position of observer) and Charlie (direction of attack) or Bravo (position of observer) and Foxtrot (actual location of attack) if cloud width (line item Lima) is reported.

Transmit only those line items of the format for which data are available. Use the word "Unknown" only with line item Hotel (type of attack).

Transmit line item Mike (cloud top/bottom angle at H + 10) only when data for line item Lima (cloud width) cannot be obtained.

### NBC 2 report

The NBC 2 report is based on one or more NBC 1 reports. It is used to pass evaluated data to higher, subordinate, and adjacent units. Division NBCC is usually the lowest level that prepares NBC 2 reports. However, brigade and battalion NBC personnel may prepare the NBC 2 report if they have sufficient

Table 2-1 continued.

Line	Nuclear	Remarks
X	20-cGyph contour line (30 cGyph contour line is used by other NATO forces).	Plot in black.
Y	Direction of left and right radial lines.	Direction measured clockwise from grid north (GN) to the left and then to the right radial lines (degrees or mils, state which), 4 digits each.
Z	Effective wind speed  Downwind distance of Zone I  Cloud radius  (Include unit of measure for each category.)	3 digits—effective wind speed (kmph or knots). 3 digits—downwind distance of Zone I (km or nautical miles). 2 digits—cloud radius (km or nautical miles). If wind speed is less than 8 kmph, this line contains only the 3-digit radius of Zone I (km).
ZI	Used only for friendly bursts	3 digits—Effective downwind speed: 4 digits—Effective downwind Zone 1 distance in 100s of meters. 4 digits—Effective downwind Zone 2 distance in 100s of meters. 3 digits—Cloud radius in 100s of meters.

data. However, these units will not assign a strike serial number.

Division NBCC prepares the NBC 2 nuclear report, assigns it a strike serial number, and disseminates it to the appropriate units. Each subordinate unit then decides whether to disseminate the report further. Subsequent data may be received after the NBC 2 nuclear report is sent. If this data changes the yield or GZ location, send this data in an NBC 2 nuclear update report. Use the same strike serial number and date-time of attack. Line items Alfa (strike serial number), Delta (date/time group), Foxtrot (location of attack), Golf (means of delivery), Hotel (type of burst), and November (yield) are always contained in the NBC 2 nuclear report.

### NBC 3 Report

Division NBCC uses the NBC 2 reports and the current wind information to predict the fallout area. This is sent as an NBC 3 report. It is sent to all units that could be affected by the hazard. Each unit plots the NBC 3 report and determines which of its subordinate units are affected and warns those units accordingly.

The NBC 3 report is a prediction of the fallout area. This prediction is safesided to ensure that a militarily significant hazard will not exist outside of the predicted hazard area. In other words, Zone I will represent areas where the dose rate will exceed 150 centigray per hour (cGyph) within 4 hours; and Zone II is no more than 50 cGyph in 4 hours and less than 150 cGyph in 24 hours. Commanders should use the report as battlefield intelligence when planning missions.

When a unit is in a fallout area, the commander must decide whether to stay or move. This decision is based on the mission, exposure status of the unit, and higher headquarters guidance. As the ANBACIS is improved, the commander will be able to view the modeled hazard area on a computer screen instead of basing his decision on the safe-sided STANAG plots. This will provide a more realistic depiction of the hazard area. ANBACIS is addressed in more detail later in this chapter.

The NBC 3 nuclear report (fallout prediction) is used to plan recon and survey operations. If time is critical, units may also use it to plan operations. Lines Alfa (strike serial number), Delta (date/time group), Foxtrot (location of attack), Yankee (left and right radial lines), and Zulu (effective wind speed, downwind distance of Zone I, and cloud radius) are used for a nuclear hazard.

### NBC 4 Report

When any unit detects NBC hazards through monitoring, survey or reconnaissance, this information is reported using an NBC 4 report. Separate NBC 4 reports are consolidated and then plotted on the tactical map to show

where the hazard exists. If monitoring information is incomplete, a survey may be directed. Line items Quebec (date-time group of reading), Romeo (dose rate), and Sierra (location of reading) are reported for a nuclear hazard. These items are used as often as necessary to complete the report. Other items may be included if available and necessary to complete the report.

NBC 4 nuclear reports are normalized to H + 1 readings, as necessary, and plotted on the map. From this data a contamination plot overlay is created. This overlay is sent to all units. Methods used to send the overlay to the field are, in descending order, computer data base update, electrical facsimile, messenger, liaison officer, and the NBC 5 report. Chapter 5 contains examples of NBC 4 reports. In any case, NBC 4 reports will contain only correlated data. The raw readings must be correlated and reflect the true hazard (outside) for that time.

### NBC 5 Report

The NBC 5 report is prepared from the contamination plot. This report is last in order because it consists of a series of grid coordinates. Often this message must be sent on FM radio nets. This requires lengthy transmission. The recipient is required to plot each coordinate and redraw the plot. Line items Alfa (strike serial number), Delta (date/time group), Foxtrot (location), Tango (H+ 1 date-time group), or Oscar (reference time), Romeo (dose rate), Uniform (1,000 cGyph), Victor (300 cGyph), Whiskey (100 cGyph), and X-Ray (20 cGyph) may be reported for radiologically contaminated areas.

For most avoidance situations, only the outer boundary of the area is necessary. Complete details can follow later on the facsimile or messenger-delivered plot. Some contamination situations cannot be reported through use of the NBC 5. These are areas of neutron-induced contamination. These areas must be reported via the overlay.

With the exception of line item Alfa, when a user has previously received data through other NBC reports, the data need not be repeated on the NBC 5.

For example, a unit receives an NBC 3 showing GZ location (line item Foxtrot). The GZ location does not have to be reported on the NBC 5.

The NBC 5 nuclear report is also used to transmit the decay rate of fallout to field units. All units assume decay rate of fallout to be  $n = 1.2$  until informed otherwise. The NBCC determines the decay rate and sends a report such as the one below:

```
NBC 5 Nuclear
A 52N002
R 1.6
```

This message may be sent before or after a contamination plot has been received. Since decay rate of fallout will decrease with time, the report could be sent

several times during the period of interest for a contaminated area. The NBC 5 report is also used to report the closure of a decontamination site. The NBC 5 report

should include coordinates for the site and sump, so as to notify other units of the contamination area.

## **Managing the NBC Warning and Reporting System**

Managing the NBCWRS is crucial for the success of a command. To be useful, nuclear information must be collected, reported, and evaluated. Once evaluated, it can be used as battlefield intelligence. Obtaining and converting nuclear information into usable nuclear intelligence does not just happen. The volume of information that needs to be collected and reported could easily disrupt both communications and tactical operations if not properly managed. This section describes what information is available and how that information gets to the person or unit needing it.

### **Collecting Nuclear Information**

The first step in managing the NBCWRS is to determine what information is available and who is available to collect it. Two types of data must be collected. Observer data provides information that a nuclear attack has occurred. Monitoring, survey, and recon data provide information on where the hazard is located.

Every unit is responsible for observing and recording nuclear attacks. But every unit does not automatically forward NBC 1 reports.

Many units may observe a nuclear burst. But if every unit forwarded a report, nothing would get through. For this reason, selected units with equipment to make accurate measurements submit NBC 1 nuclear reports. These units are called designated observers. The division NBCC selects designated observers and lists them in the FSOP/OPORD/OPLAN.

Additional units are selected during tactical operations based on their physical locations. They are listed in the operations order. The designated observer unit is discussed later in this chapter. Only selected units automatically submit NBC 1 nuclear reports to the NBCC.

### **Monitoring, Survey, and Reconnaissance Data**

NBC 1 reports allow the NBCC to predict where the hazards will be. This prediction (NBC 3 report) is only an estimation of the hazard area. Feedback is needed from units to determine exactly where the contamination is located.

This feedback comes from monitoring, survey, and recon (NBC 4 reports). Monitoring and recon operations give the initial location of NBC hazards to the NBCC. Initial monitoring and recon reports are generally forward through intelligence channels to the NBCC. This information may also be sent to the NBCC by ANBACIS. ANBACIS is the automated NBC information system and is described later in this chapter.

The NBCC then plots the information on the situation map. If more information is needed, the NBCC directs a unit (picked because of its location and/or capability) to collect and forward the necessary data. This unit may be an organic company NBC defense team or an NBC reconnaissance platoon from the divisional chemical defense company.

Special operations forces will depend on special forces operational detachments (SFOD) with attached LB teams, special forces group (SFG) Chemical detachments, or organic company NBC defense teams. The reconnaissance platoon may be tasked organized to support a maneuver brigade in NBC reconnaissance collection efforts. This information could be from additional monitoring reports or a survey of the area in question.

Collecting nuclear information is a joint effort of units and the NBCC. The unit does the actual collecting of information. The NBCC plans for and directs the collection effort. The division FSOP/OPORD/OPLAN should describe who collects and forwards nuclear information for evaluation. More detailed information concerning this collection effort is addressed in Chapter 5 and in FM 3-19.

## **Evaluating Nuclear Information**

After nuclear data has been collected, it is evaluated. It is then used as battlefield intelligence. The NBCC is the primary evaluation center. Units and intermediate headquarters use the raw data to develop nuclear

intelligence for their own use until detailed results are available from the NBCC.

## Unit Procedures

The outer perimeter of militarily significant contamination is the important information for the unit. Unit procedures are simplified and less accurate than NBCC procedures. Emphasis is on speed rather than accuracy. Fallout predictions are estimated quickly using simplified predictions. NBC 4 reports are plotted, but minimal effort is spent in analyzing the degree of contamination.

With exception of designated observer reporting units, intermediate headquarters (such as battalion and brigade)

consolidate and screen NBC reports. By doing this, they reduce the number of reports sent to the NBCC.

## NBCC Procedures

Procedures used at NBCCs are more detailed and complex than those at unit level. They are based on information from the entire division area and are more accurate than unit procedures. NBCC procedures also take more time to complete. This is why units use a simplified procedure while waiting for the NBCC analysis.

NBC 2, NBC 3, and NBC 5 reports from division NBCC always supersede those done by subordinate units.

## Transmitting Nuclear Information

Procedures used to transmit nuclear information to and from the NBCC are an important part of the NBC information system. Figure 2-1 shows the direction that various NBC reports travel. Usually the flow is through the chain of command: from company to battalion to brigade to division. There are exceptions to this:

- The NBCC may request information such as survey information. The unit doing the survey may report directly back to division. This is especially true for aerial surveys. The monitoring unit must also send an information copy back to the parent unit for command and control (C<sup>2</sup>) and for recording of radiation exposure, if necessary.
- Designated observers send reports simultaneously to the NBCC, and parent organization.

- Attached or OPCON units may have no direct contact with a parent unit. In these cases the headquarters to which they are OPCON passes nuclear information.
- Units that operate independently (such as Military Police or Engineers) that are operating in an area will report through the headquarters controlling that area of operation, normally a brigade tactical operations center (TOC).

The method of transmitting information depends on the tactical situation and mission of the unit. Methods are specified in FSOP/OPLAN/OPORD and unit SOP. At brigade and higher headquarters, NBC reports usually are passed on the intelligence net rather than the command net. At battalion level and lower, there is generally only one FM net available. This net is required to communicate command information. Therefore, NBC reports should be formatted ahead of time and be as short and concise as possible. In this case, wire communications are best.

Support units use admin-log nets. However, these units need to also inform the brigade TOC or division TOC when operating in that unit's area of operations. Wire communications are excellent, if available. There are numerous methods to communicate nuclear information. One is ANBACIS, which accesses information from the maneuver control system (MCS). The NBCC should evaluate all possible methods and select those that best suit the purpose. Again, this information should be contained in the unit SOP or current operations order.

Each unit and command element has a specific function in a nuclear environment. This function is in addition to normal combat functions. The exception to this is the NBCC whose primary function is NBC operations. The preceding pages described procedures and requirements for collecting, evaluating, and transmitting nuclear information. This section described responsibilities at each command level and is intended to be a guide only.

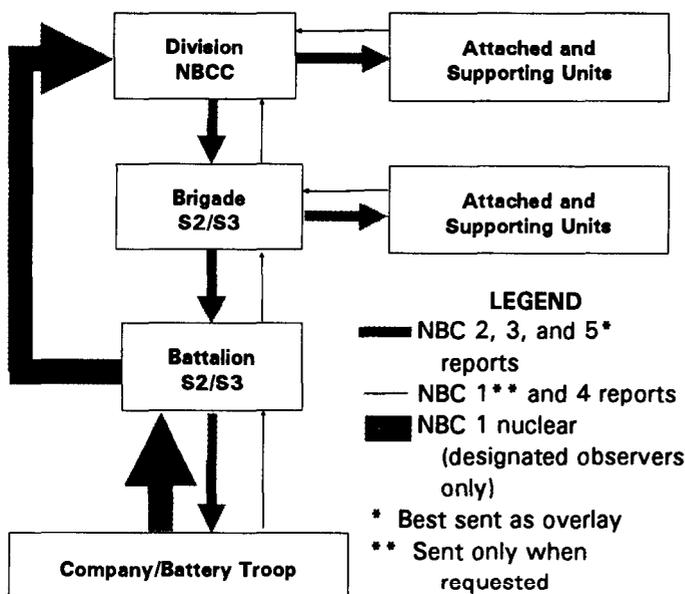


Figure 2-1. Flow of NBC reports.

## Unit Level

Unit level collection, processing, and analysis techniques are designed for rapid evaluation of nuclear data. The results are not as accurate as those obtained by the NBCC, but they are sufficient for planning until they can be replaced by those from the NBCC. Although analysis techniques are similar for company, battalion, and brigade, each level has specific responsibilities for collecting and processing nuclear information. The responsibilities are listed here (The major portion of nuclear information is collected and reported by company-, battery-, or troop-level units.):

- Report nuclear attack data, using the NBC warning and reporting system.
- Monitor for nuclear radiation.
- Plot simplified downwind hazards.
- Collect and forward soil and water samples.
- Conduct radiological surveys/reconnaissance.

Organization and training of personnel to perform these tasks must be according to AR 350-42.

## Battalion Level

The battalion level monitors the information gathering of subordinate units. Battalion chemical personnel ensure that each subordinate unit is trained. Battalion personnel also are trained to—

- Consolidate and forward nuclear reports.
- Estimate effects of nuclear hazards.
- Disseminate information on nuclear activities.
- Coordinate unit NBC recon activities with and through the battalion S2/S3 sections and with the chemical company platoon leader tasked to support the battalion.
- Coordinate with brigade to obtain additional smoke or decon assets, if required.
- Plan and supervise decentralized radiological surveys.
- Maintain a nuclear situation overlay.

## Brigade or Task Force Level

The chemical personnel at brigade must perform the same functions as battalion chemical personnel. Brigade personnel also must—

- Coordinate with other staff sections and advise them on nuclear matters.
- Plan and supervise decentralized radiological surveys.
- Collect information from and assist NBC personnel within the task force.

## NBCC Level

NBCC techniques involve more complicated procedures and are based upon the comparison of data from many sources. Much of this data is not available to a single unit. In addition to performing detailed analysis, the NBCC also—

- Receives, collates, evaluates, and disseminates reports of enemy nuclear attacks.
- Prepares and disseminates wind messages.
- Estimates the effects of enemy and friendly nuclear detonations and makes fallout predictions.
- Coordinates recon and survey activities with higher, lower, and adjacent units.
- Maintains an NBC situation map.
- Provides advise to G2 on nuclear intelligence matters.
- Provides technical assistance to all staff levels.
- Selects designated observers.
- Coordinates with other staff sections and advises those staff sections on nuclear matters.
- Provides technical assistance in the interrogation of POWs on nuclear matters. This technical assistance is generally in the form of providing the interrogator a list of questions to ask the prisoner. The questions may include employment tactics, NBC munitions, types of weapon systems available, and/or defence training status.

## Designated Observer System

Although all units have some information-gathering responsibilities, certain units, because of their capabilities and/or location, are chosen as designated observers for nuclear attacks. Designated observers must be as accurate as possible when providing data on nuclear bursts. Observers are selected to provide total coverage over the entire area of interest. This requires both ground and aerial observers. The designated observer system provides the essential data to prepare hazard location predictions and nuclear damage assessments. It provides raw observer data, using a standard report format. The NBCC specifies the primary and alternate means of communication.

### Designated Ground-Based Observers

Ground units are selected for the designated observer system based on the following factors:

- Battlefield location.
- Communication nets available.
- Mission (current and future) interference due to enemy action.
- Training and experience.
- Anticipated reliability of data.
- Possession of organic angle-measuring equipment.

Field artillery and air defense artillery units are best suited as designated observer units. These units have

organic optical equipment ideal for sighting measurements. See FM 101-10-1 for more information about which divisional units have this equipment. These items, in order of preference, are—

- M2 aiming circle.\*
- M65 or M43 battery command periscope.
- T16 or T2 theodolite.
- M2 pocket transit.

Any other unit (for example, a mortar platoon) having this or similar equipment may be designated an observer. Radar should also be considered. Many radars can define the nuclear cloud. Field artillery and air defense artillery radars are positioned in the division and corps areas.

*\*This equipment is preferred because it is set to grid north (GN) and measures in mils.*

## Designated Aerial Observers

Aircraft provide excellent observer coverage for nuclear attacks. The NBCC coordinates with the appropriate

aviation officers to have several aircraft crews designated as observers. The aviation unit commander selects the crews. Designated aircrews are instructed to report data about the type of attack and when and where it occurred. If aviators measure cloud parameters, they must also provide the location from which it was measured.

Aviators have the advantage of height. They are able to see and report actual GZ locations. They also can see and estimate crater width. Such data is usually not obtainable from ground observer units.

## Nondesignated Observers

All units are required to record (in the prescribed format) their observations concerning nuclear strikes. Nondesignated observer units or any battalion or brigade units that have not been specifically tasked will transmit their reports only on request. However, these units must report a nuclear attack only to the next higher headquarters according to local SOP.

# Friendly Nuclear Attack Warning

Friendly troops close to an attack could be subjected to the same casualty-producing effects as the enemy. Advance warning of a friendly nuclear attack ensures that friendly forces can protect themselves from the effects of the attack. This warning is in the form of a STRIKWARN message. OPSEC and SIGSEC measures are taken to prevent the enemy from intercepting the warning message and taking protective measures.

## Responsibility

The executing commander is responsible for initiating the warning. Commanders authorized to release nuclear attacks must ensure that attacks affecting the safety of adjacent or other commands are coordinated with those commands. Attack notification will normally be transmitted from the division NBCC or from DIVARTY. This gives adjacent commands enough time to warn their personnel, take protective measures, and prepare to exploit the weapons' effects.

STRIKWARN messages must be sent to—

- Subordinate headquarters whose units are likely to be affected by the attack.
- Adjacent land, air, and naval headquarters that may be affected by the attack.
- Next higher levels of command, when units not under the command of the executing commander may be affected by the attack.
- All aviation units and ground units that have aviation assets attached.

Warning of impending attacks is initiated no earlier than necessary to warn personnel. Use any means of communication (preferably secure) to ensure all affected personnel are warned. It is crucial that all friendly forces, down to the lowest level, have time to react to the warning and take appropriate precautions.

Warning messages should be classified according to current OPSEC instructions and the speed of dissemination required. If secure electronic means are not available, the message should be encoded. STRIKWARN messages may be sent in the clear if the issuing commander determines that safety warnings override security requirements. Do not send a warning message in the clear earlier than 60 minutes before the attack. Lines Delta and Foxtrot of the STRIKWARN should not be sent in the clear. The word "STRIKWARN" is never sent clear text.

Battalion is the lowest level to receive a STRIKWARN message. At no time will messages be transmitted below battalion level. Instead, subordinate units are given specific instructions on what actions to take. These instructions are brief and use the code words and formats described in unit SOP/FSOP/OPORD/OPLAN. They include—

- Code word indicating type of attack.
- A brevity code that describes the specific action to be taken.
- Expected timed attack.

When a nuclear attack is cancelled, units previously warned must be notified by the fastest means available. The cancellation message consists of line item Alfa from the STRIKWARN plus the word "cancelled." Line item Delta of the attack warning should be used also. Units

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receiving cancellation messages must always request authentication from the sender.

### STRIKWARN Messages

As with the other NBC messages, STRIKWARN messages have been standardized. The United States and its NATO and ABCA allies use the same message formats. This speeds transmission of messages and improves accuracy and understanding. The meaning and use of each line item is described in Table 2-2, next page.

Alfa, Delta, Foxtrot, Hotel, and India are the only line items transmitted for a STRIKWARN. If fallout is produced and will be a hazard to friendly troops, send an NBC 3 nuclear report to all affected units. Figure 2-2, (page 2-9), shows examples of STRIKWARN messages in standard and USMTF formats.

The closer a unit is to a nuclear attack, the greater are the precautions it must take. That is why there are three minimum safe distances (MSDs) in the STRIKWARN. Each MSD corresponds to a degree of protection needed to remain in the area. Thus, if a unit cannot achieve the protection required, it must exit that zone. Table 2-3 (page

2-10) explains the relationship between MSD and protection.

The protection requirements in Table 2-3 are for negligible risk to all personnel—the preferred risk. If the commander decides additional risk is necessary, the protection can be modified. Appendix A describes the risk categories in greater detail. Refer to it before making any decisions. The protection requirements chart (Table 2-3) is set up primarily for ground troops. Aircraft are sufficiently protected if they remain outside MSD3. However, pilots are susceptible to dazzle and may be affected at much greater distances.

When a unit receives a STRIKWARN message, the first action is to plot it on the tactical map. This identifies ground zero and how far the effects will extend. The commander can then determine what action to take. Figure 2-3, (page 2-10), shows a plotted STRIKWARN for a single burst.

The Alfa team in Figure 2-3 will have to dismount and get in foxholes with overhead cover or evacuate the area. On the other hand, Bravo team must, as a minimum, assume a prone position. Battalion headquarters would only have to be concerned with dazzle and EMP.

(Text is continued on page 2-10)

**Table 2-2. Meaning and use of STRIKWARN line items.**

Line Item	Meaning
A	Target number, nickname, or code word
D	a. Multiple burst. Date-time attack (pulse) will start, followed by date-time attack (pulse) will end (Zulu time). b. Single burst. Date-time of attack, followed by date-time after which attack will be cancelled (Zulu time).
F1	a. Multiple. UTM grid coordinates of MSD 1 box. b. Single. MSD 1, in three digits, in hundreds of meters, followed by UTM grid coordinates of GZ or DGZ. (If more than one MSD is included, GZ or DGZ will be included only in the first Foxtrot line sent).
F2	a. Multiple. UTM grid coordinates of MSD 2 box. b. Single. MSD 2 in three digits, in hundreds of meters (followed by UTM grid coordinates of GZ or DGZ, if first Foxtrot line sent).
F3	a. Multiple. UTM grid coordinates of MSD 3 box. b. Single. MSD 3 in three digits, in hundreds of meters (followed by UTM grid coordinates of GZ or DGZ, if this is the only Foxtrot line sent).
H	If one or more bursts has less than 99 percent assurance of being an airburst, or if it is a scheduled surface or subsurface burst, indicate "surface", preceded by the total number of surface, and/or subsurface bursts. If only one burst is surface, number need not be sent. If all bursts are airbursts, do not transmit.
I	Number of bursts in multiple attack. If single burst, do not transmit.

**Single Airburst**

<b>Standard Format</b>	<b>USMTF Program Format</b>
STRIKWARN	STRIKWARN//
A AC 022	ALFA/AC022//
D 072220Z-072310Z	DELTA/072220Z/072310Z//
F1 011 NB706101	FXT ONE/011/32UNB706101//
F2 025	FXT TWO/025//

**Single Airburst (Only MSD 3 Transmitted)**

<b>Standard Format</b>	<b>USMTF Program Format</b>
STRIKWARN	STRIKWARN//
A AC016	ALFA/AC016///
D 061315Z-061325Z	DELTA/061315Z/061325Z//
F3 023NB669228	FXT THREE/023/32UNB669228//

**Multiple Bursts (All Airbursts)**

<b>Standard Format</b>	<b>USMTF Program Format</b>
STRIKWARN	STRIKWARN//
A Hot Candle	ALFA/HOT CANDLE//
D 130605Z-130715Z	DELTA/130605Z/130715Z//
F3 NB590167, NB521723, NB630350, NB600354	FXT THREE/32UNB590167/ 32UNB521723/ 32UNB630350/ 32UNB600354//
I 12	INDIA//12//

**Multiple Bursts (3 Surface Bursts)**

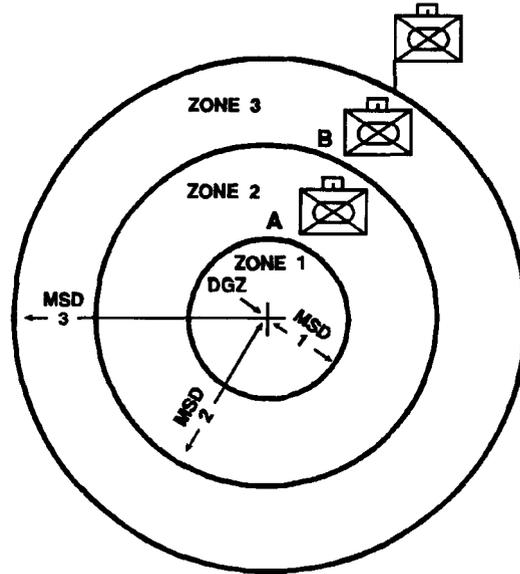
<b>Standard Format</b>	<b>USMTF Program Format</b>
STRIKWARN	STRIKWARN//
A Lamp Post	ALFA/LAMPPOST//
D 162025Z-162155Z	DELTA/162025Z/162155Z//
F3 PA490650,PA511671, PA537674, PA527650, PA515650, PA511656, PA505656, PA505650	FXT THREE/32UPA490650/32UPA511//671, 32UPA537674/32UPA527650/ 32UPA515650/32UPA511656/ 32UPA505656/32UPA505650//
H 3 Surface	HOTEL/03/SURF//
I 22	INDIA/022//

*Figure 2-2. Examples of STRIKWARN messages.*

### FM 3-3-1

Nuclear weapons are often targeted as a group of weapons (package) to defeat a particular threat. It would be time consuming to send separate STRIKWARNs for every weapon in a package. For that reason, multiple bursts are grouped as a package, and the outer limits of the MSDs plotted as a box. The coordinates for the corners of the box are then transmitted. Plot the points nearest friendly troops first. Figure 2-4, (page 2-11), shows a plotted STRIKWARN for a multiple burst.

By drawing a box, large safe areas are included in the hazard area. If maneuver space is limited, additional coordinates could be added to the STRIKWARN. Figure 2-5, (page 2-11), shows a plotted STRIKWARN with additional coordinates added.



**Figure 2-3. Zones of warning for a single-burst friendly nuclear strike.**

**Table 2-3. Relationship between MSD and protection.**

Protection Requirements			
Radius	Corresponding To	Zone	Requirements
MSD 1	Limit of negligible risk to warned and protected personnel (See note 5)	1	Evacuation of all personnel (See note 4)
MSD 2	Limit of negligible risk to warned and exposed personnel	2	Maximum protection (See note 6)
MSD 3	Limit of negligible risk to unwarned and exposed personnel	3	Minimum protection (See note 7)
More Than MSD 3			No protective measures except against dazzle and EMP

**Note 1.** MSD means minimum safe distance.

**Note 2.** The MSD is equal to a radius of safety (RS) for the yield, plus a buffer distance (BD) related to the dispersion of the weapon system used. When surface bursts are used, or an intended airburst has less than a 99 percent assurance of no militarily significant fallout, the fallout hazard will be considered. Details will be transmitted in a subsequent NBC 3 Nuclear report if fallout will be a hazard to friendly units.

**Note 3.** Commanders will be guided to safety criteria as stated in FM 101-31-1.

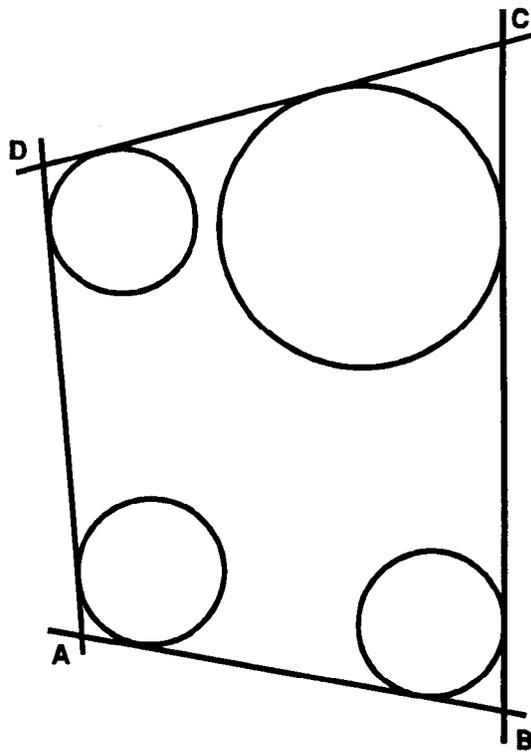
**Note 4.** If a unit commander is unable to evacuate MSD 1, he will immediately require as much protection as possible and report through his next higher headquarters to the releasing/executing commander.

**Note 5.** Negligible risk should not normally be exceeded unless significant advantages will be gained.

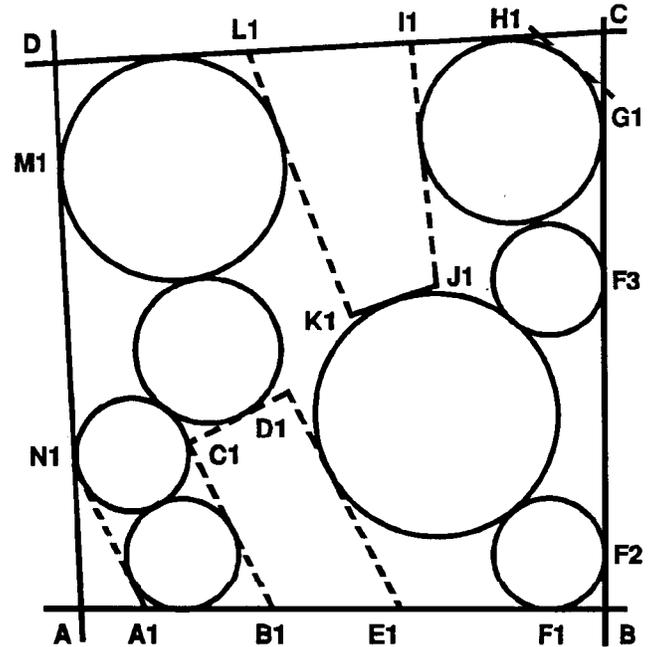
**Note 6.** Maximum protection for ground forces denotes that personnel are in "buttoned up" tanks or sheltered in fox-holes with overhead protection.

**Note 7.** Minimum protection for ground forces denotes that personnel are prone on open ground with all skin areas covered and with an overall thermal protection at least equal to that provided by a two-layer uniform.

**Note 8.** Since the least separation distance (LSD) for light aircraft is exceeded by MSD 3, aircraft remaining beyond MSD 3 will avoid significant degradation of the airframe or pilot performance (except against dazzle) severe enough to prevent mission accomplishment.



**Figure 2-4. Zones of warning for a multiple-burst friendly nuclear strike.**



**Figure 2-5. Zones of warning for a friendly multiple nuclear attack when maneuver space is limited.**

## Automated Nuclear, Biological, and Chemical Information System (ANBACIS)

ANBACIS is a software information system that supports the chemical staff officer and NCOs, as well as chemical units (squad to brigade). It furnishes the communication, recordkeeping, and calculation of NBC warning and reports, tactical decision aids, and databases essential to accomplish their tasks. One module is the NBCWRS—an automation of the manual data processing described in this manual. ANBACIS was designed to operate on the Army Common Hardware and to operate in the stand-alone mode on any IBM compatible computer. ANBACIS is user friendly with drop-down windows.

It can receive any number of NBC 1 reports and create the correct number of NBC 2 reports. It will then convert

the NBC 2 reports to NBC 3 reports, using the correct weather information previously received electronically from the staff weather officer. It will take the basic wind report and create the effective downwind report in seconds. This is done without drawing the wind vector plots outlined in Chapter 3 and Appendix D.

It has other modules to create smoke plans and to calculate radiological/chemical problems and flamefield expedient operations.

For additional information on ANBACIS, refer to the ANBACIS user's guide.