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LASER CLEARINGHOUSE REPORTS HANDBOOK

Revision A1
March 15, 2005

Prepared by:
CMOC/J3S
Cheyenne Mountain AFS, CO

A handwritten signature in black ink, appearing to read "P. Mills".

PATRICK M. MILLS, CAPT, USN
Director of Operations
Cheyenne Mountain Operations Center

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1. Introduction

a. Purpose. The Laser Clearinghouse (LCH) Reports Handbook contains voice and hardcopy report and message templates required for information and data exchange between the LCH and laser owner/operators (LO/O). Depending on the type of predictive avoidance (P/A) provided, the LCH and/or 1st Space Control Squadron/Space Control Center (1 SPCS/SCC) may be involved. This handbook applies only to DOD laser programs whose lasers have not been waived by the LCH.

The LCH and LO/Os must work together to provide safe and responsible laser activities, as required by Department of Defense (DoD) Instruction 3100.11.¹ Non-waived LO/Os require USSTRATCOM/J3 authorization to conduct laser activities per the DoDI. Authorization is granted upon approval of the laser program P/A and Capability Validation plans. DoD LO/Os must obtain predictive avoidance open firing windows from the LCH or 1 SPCS/SCC prior to conducting laser activities, per the individual laser P/A plans.

Laser systems currently conducting laser activities under previous agreements may continue to do so, with the understanding that the DoDI and the P/A process will be mandated in the future to all DoD laser systems.

b. Handbook Maintenance. The Cheyenne Mountain Operations Center Space Control Division (CMOC/J3S) will be the controlling authority for this handbook. CMOC/J3S can approve and implement revisions and updates as required to maintain the LCH mission. At a minimum, the handbook will be reviewed annually.

c. LCH and 1 SPCS/SCC Points of Contact. Table 1 contains phone numbers and e-mail addresses for the LCH and 1 SPCS. The DSN prefix for Cheyenne Mountain AFS is 268.

Table 1 -- Cheyenne Mountain Points of Contact

| | | |
|------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Address: | CMOC/J3SE 1 NORAD Rd, Suite 8300 Cheyenne Mountain AFS CO 80914 | 1 SPCS/CCDO 1 NORAD Rd, Suite 9101 Cheyenne Mountain AFS CO 80914 |
| e-mail: | lch@cheyennemountain.af.mil | 1spcs@cheyennemountain.af.mil |
| SIPRNet: | LCH personnel have individual accounts. Contact the LCH for specific SIPRNet addresses. | 1spcs.scc@cmafsdms.usspace.spacecom.smil.mil |
| Unclass Phone: | 719-474-4496/97/16 | 719-474-4407/4401 |
| Secure Phone: | 719-474-2416 | 719-474-3380 |
| Unclass Fax: | 719-474-3438 | 719-474-3211* |
| Secure Fax: | 719-474-3240 | 719-474-3056 |
| Website Address: | N/A | N/A |

* Submit P/A requests to the SCC via unclassified fax as the primary method

¹ DoD Instruction 3100.11, "Illumination of Objects in Space by Lasers", 31 March 2000.

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2. List of Reports

Table 2 lists all the reports detailed in this handbook. Information includes report name, type, classification requirements, the report source and recipient, and the timeliness requirements or special considerations for each report.

Table 2 -- List of Reports

| Name | Type | Classification | From | To | Timeliness |
|---------------------------------------|-------------|----------------------------------------------------------------------|-------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Laser Status Report | Voice | Classified/Unclassified Phone (Call the SCC if non-duty hours) | LO/O | LCH/SCC | • 1 hour prior to the start of daily laser activities |
| Quick Look Report | Voice | Classified/Unclassified Phone (Call the SCC if non-duty hours) | LO/O | LCH/SCC | • Within 15 minutes after completion of all daily laser activities |
| Inadvertent Illumination Notification | Voice | Classified/Unclassified Phone (Call the SCC if non-duty hours) | LO/O | LCH/SCC | • Within 15 minutes of determination of inadvertent laser activity |
| Space Event Notification | Voice | Classified/Unclassified Phone | LCH/SCC | LO/O | • As soon as possible following determination of a space event |
| P/A Request Message | Text | Classified/Unclassified | LO/O | - LCH - SCC | • Submit NET 30 and NLT 7 days prior to laser activity • Submit NET 4 and NLT 3 days prior to laser activity |
| P/A Approval Message | Text | Classified/Unclassified | LCH/SCC | LO/O | • 1 day prior to laser activity, and per P/A plan |
| UPL Message | Text | Classified/Unclassified | LCH | LO/O | • 1 day prior to laser activity, and as required |
| Laser Activity Summary Report | Text | Classified/Unclassified | LO/O | LCH | • Within 7 days of the end of a laser activity period |
| Inadvertent Illumination Report | Text | Classified/Unclassified | LO/O | LCH | • Within 12 hours of determination of a laser incident |
| Laser Test Master Schedule | Text | Classified/Unclassified | LO/O | LCH | • Annual projection of laser firings; update for next 12 months of laser activities 2 weeks prior to the end of each calendar quarter |

Note: Text messages/ and voice reports will be classified based on laser system's Security Classification Guide. If classified, SIPRNet will be the preferred method of text message reporting collateral SECRET information. JWICS will be used for higher classifications, as appropriate.

NET = No Earlier Than NLT = No Later Than

3. Voice Reporting Templates

a. Reporting Guidelines. Voice reporting is used to check communication links between the LCH and the LO/O, confirm or change scheduled activity, provide laser status, indicate start and stop times of laser activity, announce space events that may impact activities, inform of inadvertent laser illuminations, and other such information necessary to effectively conduct laser activities.

The LO/O will initiate the *Laser Status Report*, *Quick Look Report*, and *Inadvertent Illumination Notification* in accordance with the following voice reporting templates. Depending on the type of predictive avoidance support the LO/O is receiving, the LO/O will call either the LCH or the 1 SPCS/SCC. Contact the LCH during normal duty hours (0800-1700 Mountain Time, Mon-Fri, except holidays); call the 1 SPCS/SCC at all other times. Phone numbers are in Paragraph 1c of this handbook. Report purpose, time requirements, and other pertinent details are indicated in each template.

Voice Reporting Templates Laser Status Report

This is a voice report to the LCH or 1 SPCS/SCC to verify a scheduled laser activity is still planned, to check communications links, and provide status of the site's laser equipment. Note, this report is required at the beginning of daily laser activities. Use the *Quick Look Report* at the end of daily laser activities.

Place this call one hour prior to the start of daily laser activities.

- Note Date / Time of Call. Contact the LCH during normal duty hours (0800-1700 Mountain Time, Mon-Fri, except holidays); call the 1 SPCS/SCC at all other times.

Provide the following information to the LCH or SCC:

- Classification of Call (e.g., Unclassified or Secret)
 - If call is classified, ensure the use of a secure communications system
- Name of Caller
- Organization/Company
- Confirm Communications
 - Call is clear / some static / unreadable
- Laser System
- Time of Scheduled Laser Activity
- Anticipated Stop Time
- Status of System (e.g., Green, Yellow, Red)
 - If Yellow or Red, provide brief description of problem and possible impact to test

Voice Reporting Templates Quick Look Report

This is a voice report to the LCH or 1 SPCS/SCC to confirm the completion of daily laser activities. If an event is cancelled, such as a launch scrub, use this report to notify the LCH of the cancellation and provide an estimated time for the next launch window, if available. If this occurs during non-duty hours, call the 1 SPCS/SCC with the information.

Place this call within 15 minutes after the completion of all daily laser activities.

- Note Date / Time of Call. Contact the LCH during normal duty hours (0800-1700 Mountain Time, Mon-Fri, except holidays); call the 1 SPCS/SCC at all other times.

Provide the following information to the LCH or SCC:

- Classification of Call (e.g., Unclassified or Secret)
 - If call is classified, ensure the use of a secure communications system
- Name of Caller
- Organization/Company
- Laser System
- Stop Time of Last Laser Activity
- Brief Assessment of whether laser activity was within authorized parameters
- Brief Assessment of Laser activity success
 - If this report is for the last action of a laser activity period, indicate that this report is for the conclusion of that period, and provide a brief assessment of the entire period

Voice Reporting Templates Inadvertent Illumination Notification

This is a voice report to the LCH or 1 SPCS/SCC to confirm the inadvertent illumination by a laser outside authorized parameters. This voice report must be followed up by the hardcopy Inadvertent Illumination Report within 12 hours of determination of inadvertent activity.

Place this call within 15 minutes following the determination of inadvertent laser activity.

- Note Date / Time of Call. Contact the LCH during normal duty hours (0800-1700 Mountain Time, Mon-Fri, except holidays); call the 1 SPCS/SCC at all other times.

Provide the following information to the LCH or SCC:

- Classification of Call (e.g., Unclassified or Secret)
 - If call is classified, ensure the use of a secure communications system
- Name of Caller
- Organization/Company
- Nature of Incident (inadvertent firing or firing outside authorized parameters)
- Laser System
- Laser System Location
- Time of Laser Firing During Incident
- Output Power
- Laser Aim Position (azimuth and elevation)*
- Laser Target (satellite number, missile, point in space, star, etc.)*
- P/A Open Window Times
- P/A Azimuth and Elevation limits (if applicable)
- Test Director's Assessment of Laser Activity's Success

* If the LO/O exclusively uses Right Ascension and Declination, submit positional information as R.A and Dec.

Voice Reporting Templates Space Event Notification

This is a voice report from the LCH (or 1 SPCS/SCC, as applicable) to inform the LO/O of a space event that impacts planned laser activities. The event may be a maneuver of a satellite on the list of protected satellites, or a foreign or domestic launch. Usually this notification will be used if the event occurs within 24 hours of the scheduled activity. However, if the LCH has sufficient time to determine new ephemerides and evaluate the effect of the maneuver on the scheduled activity, and no change to approved scheduled activities is required, it is not necessary for the LCH to notify the LO/O. If there is insufficient time to analyze the impact, the LCH will notify the LO/O of the event as soon as possible and delay the laser activity. Note, the 1 SPCS/SCC will not perform analyses, and will directly call the LO/O with notification of the delay. The LCH will determine new predictive avoidance windows and provide those times to the LO/O as soon as practical.

The LCH (or 1 SPCS/SCC, as applicable) will place this call to the laser owner/operator as soon as possible following the determination of a space event.

If the LCH is providing the P/A information for the specific laser activity in question, they will notify the LO/O of the space event during normal duty hours. The 1 SPCS/SCC will provide the notification in all other situations.

- Note Date / Time of Call

Provide the following information to the LO/O:

- Classification of Call (e.g., Unclassified or Secret)
 - If call is classified, ensure the use of a secure communications system
- Name/Rank of Caller
- Organization (LCH or 1 SPCS/SCC)
- Nature of space event (maneuver/launch)
- Time of event
- Determination of impact on scheduled laser activities
- Estimated time until new predictive avoidance windows are calculated
- Discuss options or alternative plans, if available

4. Hardcopy Reporting Templates

a. Message Formats. These are the hardcopy messages exchanged between the LCH (or 1 SPCS/SCC, as applicable) and LO/O: *Predictive Avoidance Request Message (PRM)*, *Predictive Avoidance Approval Message (PAM)*, *Unique Protect List (UPL)*, *Laser Activity Summary Report (LASR)*, and the *Inadvertent Illumination Report (IIR)*. They will be sent via SIPRNet e-mail, unless other methods and media are agreed upon between the LCH and LO/O.

All exchanged text files (excluding the PAM) will be formatted as follows:

1. MS-DOS ASCII text file (Unix ASCII text may be used if specified).
2. 'White space' consists of one or more consecutive blank characters.
3. Blank lines may be inserted for readability, though will be ignored in parsing.
4. Follows the naming convention indicated in this handbook.
5. All dates and times will be in UTC.
6. Where indicated, "END OF FILE" must be included and will signify the file's end.

The LCH typically uses target regions defined by ranges in azimuth and elevation (as provided by the LO/Os in their request messages). This situation is reflected in the examples. If tasked, the SCC provides open window times for point-to-point laser activities. In those instances, it will only be necessary for the LO/O to provide the individual satellite identification numbers in the "Protected Region Parameters" section of the message, not regions in the sky. The acceptable format, to include the satellites of interest for a particular laser activity, is:

Satellite ID Numbers are: 15832
 18921

If targets are other than satellites, such as the moon, planets, or specific stars, list them as well.

Hardcopy Reporting Templates Predictive Avoidance Request Message

The *Predictive Avoidance Request Message* (PRM) is submitted to either the LCH or SCC, depending on which organization is providing the P/A support.

Submit the request to the LCH NET 30 and NLT 7 days prior to the anticipated laser activity. Note, if the PRM is provided earlier in the window (i.e., closer to 30 days prior to laser activities), the LCH will have more opportunity to evaluate closures and recommend changes to the LO/O in order to optimize open windows. Also, the PRM does not preclude the LO/O's requirement to coordinate (via voice) with the LCH 60 days prior to the planned laser activity, as described in the Standard Plan. The PRM shall be a text file sent via unclassified e-mail (or other agreed-upon method) to the LCH in the following example format. In "Mission Information", if the target type is a specific object, such as a SATNO (or list of SATNOs) or planet, leave the "Protected Region Parameters" section blank.

Submit the request to the SCC NET 4 and NLT 3 days prior to the anticipated laser activity. The primary method to submit the request is via unclassified fax (phone/fax numbers are in Table 1.) If the LO/O prefers the SCC's open windows approval message via e-mail, specify such in the "Remarks" section of the message, and ensure the e-mail address is listed in the POC section. If any other specific requirements are requested, such as e-mailing the approval to a different organization, state such in the "Remarks".

Naming convention: PRM-xxx.txt, where xxx is the mission name.

The PRM format is on the next page.

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File Name: PRM-xxxxx.txt
Message Purpose: PA Request Message
Report Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
Point of Contact: John Doe, (Voice) 900-123-4567, (Fax) 900-123-4567,
(Secure) John.Doe@xxx.af.smil.mil
Remarks: Note specific requirements, e.g., fax or e-mail approval message, or list specific recipients

LASER/SOURCE INFORMATION

Owner/Operator: system name
Name: laser name
Output Power: xxx Watts at y.yyy microns, CW/Pulsed
Latitude: xx.xxxxx degrees N
Longitude: YYY.YYYYY degrees W
Altitude: z.zzzzz km
Max half beam divergence: x micro-radians

MISSION INFORMATION

Name: mission name
Target Type: xxx Missile/Drone/Satellite/etc
Location: event location/launch-impact points/etc
Start Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
End Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
Duration (HH:MM:SS): HH:MM:SS

PROTECTED REGION PARAMETERS

Region Number: 1 of N
Azimuth Range: x.x to y.y degrees
Elevation Range: x.x to y.y degrees

Region Number: 2 of N
Azimuth Range: x.x to y.y degrees
Elevation Range: x.x to y.y degrees

END OF FILE

Hardcopy Reporting Templates

Predictive Avoidance Approval Message -- LCH

The *Predictive Avoidance Approval Message -- LCH* contains the Open Windows Report generated by an LCH CP/A run on a region. The file naming convention is: "xxx T-x_ddmmmyy-RNnn.txt", where "xxx" is the mission name, "T-x" is the number of days prior to the scheduled activity, and "nn" is the corresponding Region Number. If the region number is under 10, the first *n* will be a place-holding zero. If the target is other than an azimuth/elevation region, the LCH will use a naming convention to most easily associate the file with the target (e.g., such as a SATNO) or program, as appropriate, in place of "-RNnn" in the file name.

The *Predictive Avoidance Approval Message (PAM)* will be sent via unclassified e-mail (or other agreed-upon method) to the LO/O with all "Time Windows Report" text files attached. Each report corresponds to a single region, thus the total number of reports is equal to the total number of regions requested.

Following is an example format for one Time Windows Report (the cover page, as automatically generated by the LCH software, will be included but has not been displayed in this example), file named PAM-xxxx-RN01.txt:

```

Laser Owner/Operator:           LO/O name
Report Date/Time (GMT):        2003 Apr 09 (099) 1024 36
Mission Name:                   xxxxxx
Mission Start Date/Time (GMT):  2003 Apr 08 (098) 1200 00
Mission Stop Date/Time (GMT):   2003 Apr 08 (098) 1800 00
Mission Duration (HH:MM:SS):    6:00:00
Type of Windows in this report: Authorized Shoot (Open) Windows
Comment:                        This is a sample message.
YYYY MMM DD (DDD) HHMM SS      YYYY MMM DD (DDD) HHMM SS      MM:SS
-----
2003 Apr 08 (098) 1405 42      2003 Apr 08 (098) 1412 14      6:32
2003 Apr 08 (098) 1419 40      2003 Apr 08 (098) 1421 14      1:34
2003 Apr 08 (098) 1427 30      2003 Apr 08 (098) 1431 47      4:17
2003 Apr 08 (098) 1542 42      2003 Apr 08 (098) 1548 21      5:39
2003 Apr 08 (098) 1551 15      2003 Apr 08 (098) 1554 14      2:59
2003 Apr 08 (098) 1601 14      2003 Apr 08 (098) 1604 23      3:09
2003 Apr 08 (098) 1607 08      2003 Apr 08 (098) 1607 16      0:08
2003 Apr 08 (098) 1616 10      2003 Apr 08 (098) 1620 40      4:30
2003 Apr 08 (098) 1656 54      2003 Apr 08 (098) 1702 50      5:56
2003 Apr 08 (098) 1707 38      2003 Apr 08 (098) 1712 09      4:31
2003 Apr 08 (098) 1746 28      2003 Apr 08 (098) 1751 30      5:02
2003 Apr 08 (098) 1756 34      2003 Apr 08 (098) 1757 49      1:15
Percent = 21.75%
Source Geometry (WGS84)
-----
Type:           Point with Az and El limits (Lat/Lon/Az/El in Degrees)
Latitude:       33.109 N
Longitude:      254.012 E
Altitude:       11.7348 km
Azimuths:       65.0 to 69.0
Elevations:     30.0 to 40.0

```

Hardcopy Reporting Templates Predictive Avoidance Approval Message -- SCC

The *Predictive Avoidance Approval Message -- SCC* follows the same intent as its counterpart, the *Predictive Avoidance Approval Message -- LCH*. The difference is the source: the SCC generates this message when using the Space Defense Operations Center (SPADOC) software system to calculate the open window times. SPADOC uses variable ½-angle safety cone sizes, based on the age of the ephemeris and pass geometry.

Whereas the LCH PAM can include regions for the source and target, the SCC PAM is limited to a fixed source and satellite target (targets can also be the Moon and planets, or other astronomical objects or points in space defined by Right Ascension/Declination or azimuth/elevation).

The PAM will be a text file sent via unclassified e-mail (or other agreed-upon method) to the LO/O.

Following is an example format for a PAM generated by the SCC using the SPADOC system. The period of interest starts at 0000z on Julian Day (JD) 343, 2004, and lasts 4 hours. The satellite target is SATNO 23027. (This example contains a portion of the actual Safe Irradiation Times (Item 5) listed in the original message.)

```
O 080120Z DEC 04
FM CMOC SPADOC4 CHEYENNE MOUNTAIN AFS CO//SDD//
TO RUWRCAW/1SPCS SCC CHEYENNE MOUNTAIN AFS CO
BT
UNCLAS                      FOUO
SUBJECT:  SPADOC NOTIFICATION  (U)
(U) REAL

1.  (U) MESSAGE TYPE:  SPADOC DE SITE CLEARINGHOUSE REPORT
2.  (U) PREPARATION DATE TIME:  080112ZDEC04
3.  (U) VALID FOR DE EMITTER SITE/VESSEL/MISSILE/SAT # TEST
4.  (U) DE TARGET TYPE:
      SATELLITE TARGET NUMBER:  23027
      PERIOD OF INTEREST:  04343000000.000Z - 04343040000.000Z
5.  (U) SAFE IRRADIATION TIMES FOR EMITTER:
      START TIME  DURATION TIME  STOP TIME  WAIT TIME
343000059.444Z 000227.008 343000326.452Z 000136.397
343000502.848Z 000530.458 343001033.306Z 000055.711
343001129.017Z 002631.682 343003800.699Z 000045.711
343003846.410Z 000139.498 343004025.908Z 000040.396
343004106.305Z 002646.935 343010753.240Z 000034.138
343010827.378Z 002653.456 343013520.834Z 000042.682
343013603.516Z 002721.851 343020325.367Z 000033.597
343020358.964Z 001614.000 343022012.964Z 000035.156
343022048.119Z 003937.440 343030025.559Z 000030.122
343030055.681Z 000442.633 343030538.313Z 000029.760
343030608.073Z 000003.030 343030611.103Z 000032.408
343030643.511Z 002043.924 343032727.435Z 000029.020
343032756.455Z 000046.505 343032842.960Z 000029.963
6.  (U) REMARKS:
```

Hardcopy Reporting Templates Unique Protect List (UPL) Message

The UPL message is used for Hybrid P/A and Decentralized P/A programs. If the LO/O is only using Centralized P/A, this message is not applicable.

The UPL shall be a text file sent by the LCH to the LO/O via unclassified e-mail (or other agreed-upon method). The file contains the list of protected satellites' Space Control Center (SCC) number. Each SCC number is in no particular order, and separated by a new line. File naming convention: UPL-YYMMDD.txt, where YY is year, MM is month, and DD is the day the list was generated (place-holding zeros must be included).

The LCH will transmit the UPL message one day prior to the planned laser activity. Other times will be as agreed upon between the LCH and LO/O. The following example format is for two objects in the UPL:

File Name: SITENAME-UPL-YYMMDD.txt
Report Date/Time (UTC): 2004 Aug 19 (232) 10:23:51
Point of Contact: John Doe, (Voice) 900-123-4567, (Fax) 900-123-4567,
(Secure) John.Doe@xxxx.af.smil.mil
Total UPL objects: 2

15832
18921

END OF FILE

Hardcopy Reporting Templates Laser Activity Summary Report (LASR)

The LASR is a high-level recap of the Laser Owner/Operator's current laser activities, provided to the LCH within seven days of the end of a laser activity period. The report contains laser and mission information, an assessment of the activities' success, and a summary of the actual laser firing times and associated target(s). The LO/O submits the LASR as a text file sent via unclassified e-mail (or other agreed-upon method), in the following example format.

When generating a message, replace "xxxx" with the mission name in "File Name". In MISSION INFORMATION, indicate the specific type(s) of target(s) used for the current activity period. Under LASING INFORMATION, the Lasing Activity Number (LAN) is sequentially numbered for each laser firing, from 001 to 999; date and times are self-explanatory; Initial Point Az/EI and End Point AZ/EI indicate the laser pointing positions at the start and stop of each laser activity (if the LO/O exclusively uses Right Ascension and Declination for pointing (versus azimuth and elevation), provide positional information in R.A. and Dec if unable to convert to Az/EI); "Target" is a 5-digit target description, such as SATNO, or first 5-letters of a planet or star. Additional information may be provided in "Mission Assessment". The LCH will contact the LO/O if more detail is required.

The LO/O is required to maintain the data files for a period of six months from the conclusion of each laser activity during which the laser was fired in accordance with the Standard P/A plan and associated Appendix A. This will support post-event reports or analyses (such as the Inadvertent Illumination Report), if required.

The LASR message format is on the next page.

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File Name: LASR-xxxx.txt
Message Purpose: Laser Activity Summary Report
Report Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
Point of Contact: John Doe, (Voice) 808-123-4567, (Fax) 808-123-4567, (Secure) John.Doe@xxxx.af.smil.mil

LASER/SOURCE INFORMATION

Owner/Operator: xxxx
Name: laser name
Output Power: xx Watts at y.yyy microns, CW/Pulsed
Latitude: xx.xxxxx degrees N
Longitude: yy.yyyyyy degrees W
Altitude: z.zzzzz km
Max half beam divergence: x micro-radians
Azimuth Limits of lasing: x.x to y.y degrees
Elevation Limits of lasing: x.x to y.y degrees

MISSION INFORMATION

Name: xxxxx
Target Type: Missile/Drone/Satellite Number(SATNO)/Star/Planet/etc
Location: event location/launch-impact points/etc
Start Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
End Date/Time (UTC): YYYY MMM DD (JD#) HH:MM:SS
Duration (HH:MM:SS): HH:MM:SS

LASING INFORMATION

Mission Assessment: [Provide a brief recap of events, to include assessment of success, laser status, any problems or unusual conditions encountered, weather, and if there were any laser-related incidents to report.]
Inadvertent Illumination: None
Inadvertent Illumination Date/Time: N/A

Table with 8 columns: LAN, YYYYMMDD, Start -Stop HHMMSS-HHMMSS, Initial Point Az El, End Point Az El, Target. Rows include data for 001, 002, xxx, and 999.

END OF FILE

Hardcopy Reporting Templates Inadvertent Illumination Report (IIR)

The IIR is required by the LCH within 12 hours of determination of a laser incident. The LO/O will transmit classified reports via SIPRNet, or means agreed upon with the LCH.

FROM: (Laser Owner/Operator)

TO: CMOC/J3S (Laser Clearinghouse)

SUBJECT: Inadvertent Illumination Report

This is to notify the Laser Clearinghouse of a laser incident. To assist in further analysis, the following information describes the incident:

- a. Laser system name and configuration (for pulsed lasers - pulse width, pulse repetition frequency, pulse energy, divergence half-angle, and wavelength; for continuous wave lasers - power, wavelength, divergence half-angle).
- b. Laser location (latitude, longitude, and elevation).
- c. Time of laser firings during incident (date, hh:mm:ss (GMT)).
- d. Laser target (satellite number, missile, point in space, star, etc.).
- e. Laser aim position (azimuth and elevation).
- f. Assessment of incident.
- g. Laser system or test conditions that may have contributed to the laser incident.
- h. Point of contact/phone/fax numbers.

If additional information and delog data become available to clarify or provide more detail about the incident, we will forward it as part of the next Laser Activity Summary Report, or within 7 calendar days, whichever is sooner.

Signature/Name, Rank, Office Symbol
(O-6 Grade Level)

Hardcopy Reporting Templates Laser Test Master Schedule (LTMS)

The LTMS is a 12 month forecast of laser activities. The LO/O provides the schedule to the LCH within the last two weeks of each calendar quarter. This input lists the projected activities for the next 12 months, including updates and new activities.

Include as much detail as possible, with the understanding that schedules are subject to change. List specific or tentative dates if available.

Example:

| Laser Owner | Sponsoring Agency | Description of Laser Activity | 2004 Laser Activity Schedule |
|-------------|-------------------|----------------------------------------------------------------------------------|-------------------------------------------------|
| XXX | ABL SPO (e.g.) | Testing of airborne sensor laser for ranging information on ballistic targets. | 6 firings per month – April through September. |
| YYY | MDA (e.g.) | Block 2004 testing of missile defense capability. | No above-the-horizon firings in next 12 months. |
| ZZZ | AFRL (e.g.) | Verification and demonstration of the ZZZ High Energy Laser. | Periodic firings in June through December. |
| XYZ | MDA (e.g.) | Satellite precision ranging, missile defense research, and atmospheric research. | Daily firings throughout 2004 and 2005. |

UNCLASSIFIED

Distribution:
CMOC/J3S
1 SPCS/SCC
Laser Owner/Operators

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Changes

Revision A1, 15 March 2005. Page numbers reflect this version.

1. Cover. Updated date and Revision to: "Revision A1" and "March 15, 2005"
2. Page 2, Table of Contents. Changed: "Predictive Avoidance Approval Message" to "Predictive Avoidance Approval Message -- LCH" to reflect the LCH-specific Approval Message. Added "Predictive Avoidance Approval Message -- SCC" to reflect the new SCC-specific Approval Message on page 14, and adjusted the page numbers on the remaining items in the Table of Contents.
3. Page 3, Table 1.
 - Added the following for the LCH SIPRNet address: "LCH personnel have individual accounts. Contact the LCH for specific SIPRNet addresses." Added "N/A" under "Web Address" until web sites are created.
4. Page 4, Table 2
 - Laser Status Report, Timeliness. Deleted second bullet. The LSR applies only to the initiation of a laser activity period. Changed the bullet to: "1 hour prior to the start of daily laser activities".
 - Quick Look Report, Timeliness. Change "activity" to "activities".
 - P/A Request Message, Timeliness. Made separate entries in the "To" column for the LCH and SCC. Added a "Timeliness" bullet for each: "Submit NET 30 and NLT 7 days prior to laser activity" for the LCH, and "Submit NET 4 and NLT 3 days prior to laser activity" for the SCC. Added to the bottom note: "NET = No Earlier Than" and "NLT = No Later Than".
5. Page 6, Laser Status Report. Added the following clarification to the end of the first paragraph: "Note, this report is required at the beginning of daily laser activities. Use the *Quick Look Report* at the end of daily laser activities." Also changed the bold print to read as: "Place this call one hour prior to the start of daily laser activities."
6. Page 7, Quick Look Report.
 - Changed first sentence to: "This is a voice report to the LCH or 1 SPCS/SCC to confirm the completion of daily laser activities." Deleted the last sentence in the first paragraph.
 - Added the following as a sub-bullet to the last bullet in the report: "-- If this report is for the last action of a laser activity period, indicate that this report is for the conclusion of that period, and provide a brief assessment of the entire period". This further clarifies the use of this report, as indicated in the Laser Status Report (#5, above).
7. Page 8, Inadvertent Illumination Notification. Added "*" to the "Laser Aim Position" and "Laser Target" bullets, and the following note at the bottom of the page: "* If the LO/O exclusively uses Right Ascension and Declination, submit positional information as R.A and Dec."
8. Page 9, Space Event Notification. Change the first bullet to read: "- Note Date / Time of Call". Delete rest of bullet: "Contact the LCH... at all other times." Redundant.

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9. Page 10, paragraph 4.a, Message Formats. Added "(or 1 SPCS/SCC, as applicable)" after "...the LCH" in the first sentence. Some messages will be generated by the 1 SPCS/SCC. Also deleted the reference to the LCH Software's Users Manual and footnote. The LO/O does not require this information.

10. Page 11, Predictive Avoidance Request Message.

➤ New introduction sentence. Split into paragraphs addressing the LCH and SCC separately. First sentence for paragraph two, for the LCH, is "Submit the request to the LCH NET 30 and NLT 7 days prior to the anticipated laser activity." Remainder of paragraph is unchanged.

➤ End of first paragraph. Added clarification regarding target identification and use of the "Protected Region Parameters" section: "In 'Mission Information', if the target type is a specific object, such as a SATNO (or list of SATNOs) or planet, leave the "Protected Region Parameters" section blank."

➤ Deleted the reference to the LCH Software's Users Manual. The LO/O does not require this information.

➤ The SCC paragraph starts with: "Submit the request to the SCC NET 4 and NLT 3 days prior to the anticipated laser activity." The rest of the paragraph addresses the preference of the SCC to receive requests via unclassified fax, and how to address any special requirements the LO/O may have. Split the section into two pages, so the sample message was on an entire page. Renumbered remaining pages and adjusted Table of Contents.

➤ End of sample message. Delete "3 of N" and Azimuth and Elevation Ranges in the "Protected Region Parameters" section. To keep this template to one page (for reader's ease), deleted duplicate examples; the first two ("1 of N" and "2 of N") adequately relate the information flow.

11. Pages 11 through 15. Removed the requirement to e-mail these report/messages twice. Deleted the following sentence: "This e-mail will be sent twice consecutively as a data corruption precaution." If a site feels this is necessary, they will make specific arrangements with the LCH/SCC for such, and that requirement can be noted in the Laser Owner/Operator's Appendix A to the Standard P/A plans.

12. Pages 11 through 15. Removed the use of SIPRNet as the means for transferring the unclassified text files in these messages. Reworded to read: "...text file sent via unclassified e-mail (or other agreed-upon method)..." The majority of files will be unclassified, and not all LO/Os have SIPRNet. If classified transmission is required, the LCH/SCC and LO/O will agree upon the best method, and that can be documented in the LO/O-specific Appendix A.

13. Page 13, Predictive Avoidance Approval Message -- LCH.

➤ Deleted the reference to the LCH Users Manual. The LO/O does not require this information. First sentence now reads: "The *Predictive Avoidance Approval Message -- LCH* contains the Open Windows Report generated by an LCH CP/A run on a region."

➤ Added the following to the end of the first paragraph to clarify file naming conventions: "If the target is other than an azimuth/elevation region, the LCH will use a naming convention to most easily associate the file with the target (e.g., such as a SATNO) or program, as appropriate, in place of "-RNnn" in the file name." Accounts for targets other than Az/EI regions.

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14. Pages 16-17. Laser Activity Summary Report.
 - Page 16. Changed the last sentence of the first paragraph to read: “The LO/O submits the LASR as a text file sent via unclassified e-mail (or other agreed-upon method), in the following example format.” This maintains consistency of transmission requirements with the other messages/reports.
 - Page 16. Added to the second paragraph to address Az/EI in the Lasing Information section of the message: “If the LO/O exclusively uses Right Ascension and Declination for pointing (versus azimuth and elevation), provide positional information in R.A. and Dec if unable to convert to Az/EI.”
 - Page 16. Added clarification in paragraph 3 that the LO/O is only required to maintain activity data files for 6 months after conclusion of the laser activity, in the event the data is required for a post-event report or analysis (such as an Inadvertent Illumination Report).
 - Page 17. Clarify target and laser pointing format in the LASR example. In the “Lasing Information” section, deleted Target and Laser Az and EI headers. For nominal operations, the target and laser Az/EI pointing angles would be the same; listing both is duplicative. Change columns to indicate laser pointing Az/EI and the start and end of each firing activity. Clarified description in paragraph 2, page 16.
15. Page 18, Inadvertent Illumination Report.
 - Change the first sentence (under the Subject) to read: “This is to notify the Laser Clearinghouse of a laser incident.” Deleted “for our system” at the end of the sentence for clarity.
 - For line “f”, change to read: Assessment of incident.” Remainder of sentence was redundant.