



DEPARTMENT OF THE NAVY
FLEET AREA CONTROL AND SURVEILLANCE FACILITY
P.O. BOX 40
NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-0040

FACSFACJAXINST 3000.1D CH-2
30

FACSFACJAX INSTRUCTION 3000.1D CHANGE TRANSMITTAL 2

Subj: OPERATIONS MANUAL

1. Purpose. To promulgate change two to basic instruction.
2. Action. Make the following changes to FACSFACJAXINST 3000.1D, dated 01 MAY 2001.
 - a. Delete pages 5-1 through 5-16. Insert pages 5-1 through 5-15.
 - b. Delete pages 8-1 through 8-10. Insert pages 8-1 through 8-10.
 - c. Annotate Record of changes, Pg. iii.


D. K. TUTTLE
Acting

CHAPTER FIVE

TARGETS

501. GENERAL.

Naval ordnance training areas in the North Central Florida region, under the scheduling control of FACSFACJAX are the Pinecastle Live and Inert Targets, Rodman Target, and Lake George Target areas (See Appendix H for target overviews). Service contractor personnel provide the operation and maintenance of the range complex. LASER operations are discussed in Chapter 8. Scheduling of all range activities is coordinated by FACSFACJAX, as described in Chapter 6. Special projects are invited, and details may be discussed by telephone with the Pinecastle Range Control (Commercial (352)759-2945/3184), the Range Operations Department (Commercial (352)759-3305/2929), or FACSFACJAX. Personal familiarization visits to both FACSFACJAX and the Pinecastle Ordnance Training Range are encouraged. A helicopter pad is situated within the Pinecastle Centroid compound and is available.

Unit commanders must encourage close adherence to scheduled target times and ensure prompt notification of cancellations to maximize utilization of target assets and facilities.

502. SAFETY PRECAUTIONS

1. Aircrews are responsible for positive identification of the intended target. Squadron Commanders and Strike Lead shall be responsible for ensuring all aircrew members within the strike force have had familiarization flights over the Pinecastle Range for the purpose of target identification. Prior to release of ANY ordnance, the following requirements shall be met:

a. Prior to ANY day bombing, all aircrew must have one dry familiarization run over the Pinecastle target complex. Subsequent runs and flights may release ordnance on "First Pass Hot" basis provided they have completed an initial familiarization pass. Familiarization runs must be made over the Pinecastle Range if a period of thirty (30) days have elapsed since the last hot pass.

b. Prior to ANY night bombing, all aircrew must have one night dry familiarization run over the Pinecastle target complex. Subsequent runs and flights may release INERT ONLY ordnance on "First Pass Hot" basis provided they have completed an initial familiarization pass. Familiarization runs must be made over the Pinecastle Range if a period of thirty (30) days have elapsed since the last hot pass.

c. Upon initial check-in with Pinecastle Targets, the aircrews shall inform operations personnel of the intended "First Pass Hot". Aircrews shall not commence LIVE or "Hot" runs unless cleared by the appropriate target control.

d. Aircrews shall use published run-in-lines or headings of 317° or 137° (+ or - 10°) for approach to the intended target. Published run-in-lines or headings must be used for accurate electronic scoring of ordnance drops. Scoring clock codes are directly related to run-in-lines or headings utilized by aircrews. ALL LIVE ordnance must be dropped on the published run-in-lines or headings.

e. Pullouts below 200 FT AGL are prohibited.

f. Whenever an aircraft is observed making an unusually low pull-out or other unsafe flight maneuver (e.g. using a run-in-line or heading towards any spotting tower or "buzzing" a spotting tower) in the target area, range safety personnel will immediately notify FACSFACJAX and the aircrew concerned. Range Safety personnel will also immediately report any unusual occurrence (things falling off aircraft (TFOA) e.g., loss of aircraft parts, stores, or the release of ordnance other than that intended).

g. Users should report, as soon as practical, to FACSFACJAX any TFOA incident that occurs in the airspace under FACSFACJAX cognizance.

h. Whenever a fire or other irregularity is observed in the vicinity of any target, discontinue runs immediately and notify the associated target control; reporting the location and extent of observed fire or irregularity.

i. Aircraft carrying ordnance shall avoid over-flight of

populated areas.

j. Two-way radio communications are required to drop any ordnance.

k. Aircrews shall assist "SEALORD Control" in identifying aircraft which violate the restricted areas.

l. Afterburner use is prohibited in all target areas between 2000 and 0600 local.

m. Weather minimums. The ceiling and visibility minimums required for dropping ordnance in R-2906 (Rodman), R-2907 (Lake George), and R-2910 (Pinycastle), are 1000 foot ceiling and three-miles visibility within a five-mile circle of the target. Flight leaders are ultimately responsible for ceiling and visibility determinations, and the safe conduct of all ordnance deliveries.

n. Helicopters landing at the Centroid complex should be aware of the power lines north of the Helicopter pad.

503. MINIATURE OR PRACTICE ORDNANCE.

The terms miniature or practice ordnance as used in this manual refers to BDU-33/MK-76, BDU-48/MK-106, and LGTR series ordnance.

504. SCORING AND TARGET DATA.

The appropriate "Target Control" will pass scores, for all scoreable targets (miss distance and clock code direction) for INERT, LIVE and miniature or practice ordnance drops. The strafe target is scored automatically and rounds scored are relayed to aircrew via radio on the Pinycastle Target Control frequency 380.8 MHZ. Score sheets will be forwarded to units upon request. Accurate clock code directional scoring codes are based upon run-in-lines or headings reported by the aircrew. All published latitude and longitude coordinates are referenced to the World Geodetic System Datum of 1984 (WGS84); and all run-in-lines or headings are in reference to True North (T).

505. RANGE SCHEDULING AND TARGET DESCRIPTIONS.

1. Contained below are the range complex normal hours of operation (local time), general target descriptions, target data, and limitations or restrictions for individual targets.

a. Range Complex Hours of Operation

- (1) Monday and Wednesday - 1000-2000
- (2) Tuesday and Thursday - 0900-1700
- (3) Friday - 0800-1200
- (4) Target usage outside published times may be scheduled through FACSFACJAX in accordance with established notification requirements.

b. Pinecastle Target Complex (R-2910)

(1) Scheduling. All target scheduling shall be accomplished in accordance with Chapter 6. FACSFAC JAX is the only scheduling agent for the range complex. Submit target requests for LIVE ordnance at least three-working days (72 hours) in advance of intended use. The target complex is scheduled in twenty (20) minute periods of time. For special or unusual target requirements or scheduling requests contact FACSFACJAX.

(2) Airspace. The Pinecastle Target Complex, which lies within Restricted Area R-2910, will be automatically activated to 11,000 FT MSL (FL110) (Note: Restricted area extensions have lower limits). Restricted Area R-2910 may be activated up to 23,000 FT MSL (FL230) if requested.

(3) Communications. Aircrews will contact "SEALORD" on Frequency 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 380.8 MHZ when crossing into the MOA. Upon contacting "PINECASTLE CONTROL", the aircrew will inform the operator of intended "FIRST RUN HOT" (IAW Paragraph 502.1.a above). The aircrew will be asked to state number and type of aircraft, the number and type of ordnance on each aircraft, target requested, requested run-in-line, and laser system nomenclature if an onboard laser will be activated. Aircrews will be requested to acknowledge the following "**PINECASTLE**" **PRE-BRIEF**:

Minimum altitude over any building outside the target area is restricted to 500 Ft. Minimum altitude in the R-2910 restricted area extension is 1500 FT AGL. Aircrews will not release ordnance without being cleared by "PINECASTLE". Each aircrew is required to report in HOT, OFF SAFE, and state the number of ordnance released. Aircrews will be provided the current weather and advised to maintain VFR, descend on the target, make the first run dry and report positive ID. Once positive target ID is acknowledged, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

- Tower 1:	29° 06' 28" N 81° 42' 54" W
- Tower 2:	29° 06' 39" N 81° 43' 51" W
(a) Day/Night Conventional Target:	29° 07' 10" N 81° 43' 02" W
(b) Special Weapons Target: (Main Bull)	29° 07' 26" N 81° 43' 10" W
(c) Live Ordnance Target:	29° 07' 06" N 81° 42' 21" W
(d) SAM Site Target:	29° 07' 05" N 81° 43' 29" W
(e) Strafing Target:	29° 06' 54" N 81° 43' 51" W
(f) Inert Ordnance Runway/ Mini-Convoy	29° 06' 54" N 81° 43' 26" W
(g) Red Box Target:	29° 07' 15" N 81° 43' 25" W

(5) Target Facilities and Restrictions

(a) Live Ordnance Impact Area. The Live Impact Area (LIA) is contained in a 2000' diameter cleared area approximately 117° T/5,000 FT from the Special Weapons Target. The LIA consists of eleven scoreable target sections; Ammunition Dump, Fuel Farm, Sam Site East, Bunkers, Helicopter Pad, Revetments A-C, and Sam Launchers 6-8. These targets are composed of various types of vehicle hulks surrounded by earthen revetments. The interconnecting roads are bordered by approximately 2' to 3' earthen berms. Ordnance impacts are electronically scored by the Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

2. Run-in-Pattern. The allowable run-in/attack heading for the LIA target is restricted to 317° or 137° True (+ or - 10°). This restriction applies to all types and altitudes of delivery. No runs will be made toward, over, or in close proximity of the two spotting towers.

3. Authorized Ordnance. Live and Inert MK-82, MK-83, or MK-84 general purpose bombs; MK-20 with Inert sub-munitions; Rockets up to five inches; MK-76, LGTR, GBU-12, GBU-16, and GBU-10 Laser Guided bombs.

4. Restrictions

- a. No ball ammunition, incendiaries, napalm, or paraflares.
- b. No LIVE ordnance drops will be made without positive clearance from target control.
- c. Use caution concerning the spotting tower south-southwest of the live ordnance target area.
- d. LIVE ordnance drops are prohibited when surface winds in the live ordnance target area, exceed a steady twelve (12) knots.
- e. LIVE ordnance can be expended ONLY between 0900 and one hour prior to sunset.
- f. Positive identification of the live ordnance target area

is required prior to drops. (See Paragraph 502.1.a-c)

g. LIVE ordnance will normally NOT be jettisoned "SAFE" in the live ordnance target area; jettison "ARMED" if possible.

h. Burn Index (BI). In accordance with current interagency agreement between the Department of Agriculture (U.S. Forestry Service) and the Department of the Navy, the use of air delivered ordnance, to include both explosive and non-explosive, will be prohibited with the following Burning Index (BI) and Keetch-Byram Drought Index (KBDI):

- BI 70 or less: No prohibitions with KBDI less than 400.

- BI 71+: No air delivered ordnance with KBDI over 400, unless approved by the USDA Forest Service.

In special situations when the BI exceeds 70, the Navy may request permission to use air delivered ordnance, and the District Ranger may approve such request if predicted weather allows.

On days when the Burning Index is less than 71, the Range may be closed by the District Ranger for the use of air delivered ordnance due to unusual circumstances such as fire occurrences on the Forest.

FACSFAC JAX shall be responsible for contacting the District Ranger for the purpose of obtaining ordnance delivery waivers.

i. Time delay fuses are prohibited.

4. Notes:

a. FACSFACJAX will notify the NAS Jacksonville Public Affairs Officer a minimum of three working days (72 hours) prior to each scheduled LIVE ordnance drop so an appropriate press release may be prepared.

b. The Pinecastle Target complex may be closed periodically for removal of unexploded ordnance and other range residue.

(b) Special Weapons Target (Main Bull). The target consists of five concentric rings of 50, 200, 400, 600, 800, and 900 FT radii from the target center. The target is clear out to 400 FT from the target center with two concentric rings of tires at 50 and 200 feet radii from the target center. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

1. Run-in Pattern. The allowable run-in/attack heading for the "Special Weapons (Main Bull)" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes of delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, BDU-45, and LASER Guided Training Round (LGTR) series ordnance.

3. Restrictions. No ball ammunition, LIVE ordnance, rockets or paraflares.

(c) Day/Night Conventional Target. The target consists of a surplus military vehicle at the target center, surrounded by four concentric rings of tires at 50, 100, 200, and 300 FT radii situated at approximately 157° T/1,825 FT from the Special Weapons Target. The target is equipped with an integral target illumination and lighted run-in-line system for night ordnance training. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "Day/Night Conventional" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes of delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, and LASER Guided Training Round (LGTR) series ordnance.

3. No ball ammunition, LIVE ordnance, rockets or paraflares.

(d) SAM Site West Target. A 1600 FT diameter circular

service road encompassing the revetted radar and surrounding missile launcher pads. This target is not scored. (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "SAM Site West" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes of delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, MK-83 INERT, BDU-45 INERT, BDU-50 INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

(e) Strafing Target. Situated in a clear area on the Westside of the range located approximately 228° T/4,900 FT from the Special Weapons Target. The target consists of an orange/red rectangular banner suspended on the face of an earthen berm. The target is equipped with an automatic scoring device that provides scoring by recorded message on the target control frequency of 380.0 MHZ. Spotting Tower 2, at 90 FT elevation is situated on the foul line 600 FT right of the run-in-line or heading and 1,200 FT short of the banner. (See Appendix H for target overview)

1. Pattern. Right hand pattern ONLY and outside of the two (2) spotting towers using a 038° T run-in-line or heading.

2. Authorized Ordnance. Ball ammunition up to 30 MM.

3. Restrictions. No HE or Tracer rounds.

(f) Inert Ordnance Runway/Mini-convoy. Consists of a mock runway (13-31) situated approximately 205° T/3,575 FT from the Special Weapons Target. The mini-convoy consists of various small vehicles situated at the end of the mock runway. This target is not scored. (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "Inert Ordnance Runway/Mini convoy" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, BDU-45 INERT, BDU-50 INERT, MK-83 INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

(g) Red Box Target. The target consists of four (4) red rectangular targets, positioned to form a square with a communications unit in the center. The target is located approximately 230° T/1,725 FT from the Special Weapons Target. The target square, is contained within a 200 FT circle. The target is electronically scored by Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "Red Box" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, BDU-45 INERT, BDU-50 INERT, MK-83 INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

c. Rodman Target (R-2906)

(1) Scheduling. Target scheduling is accomplished in accordance with Chapter 6.

(2) Airspace. Rodman Target lies within Restricted Area R-2906. Restricted Area R-2906 is normally activated to 11,000 FT

MSL (FL110) when the target is scheduled. Restricted Area R-2906 may be activated to 14,000 feet MSL (FL140) if requested.

(3) Communications. Aircrews will contact "SEALORD" on 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 321.8 MHZ when crossing into the MOA. Upon contacting "RODMAN" the aircrew will be asked to state number and type of aircraft, run-in line, and the number and type of ordnance on each aircraft. Aircrews will be requested to acknowledge the following "RODMAN" PRE-BRIEF:

Rodman Target Pre-Brief: "For multiple runs the minimum downwind altitude is 1,500 FT AGL; remain south of the barge canal if below 3,000 FT AGL". Prior to first ordnance release, advise Rodman target which run-in heading will be used for drops." Upon aircrew acknowledgement of the "Rodman Target Pre-Brief", "SEALORD Control" will pass the aircrew to "Rodman Target Control" on frequency 321.8 MHZ. Aircrews will be advised to maintain VFR, descend on the target, make the first run dry and report positive ID. Once positive target ID is acknowledged, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

(a) Rodman Target:	29° 29' 25" N
	81° 46' 28" W
1. Tower 1:	29° 29' 25.8" N
	81° 45' 53.8" W
2. Tower 2:	29° 29' 36.5" N
	81° 46' 03.8" W

Rodman Range also includes Helicopter Landing Areas designated as Landing Zones (LZ) and Confined Area Landing (CAL) whose coordinates are as follows:

Open North LZ	29° 30' 09.2" N	81° 46' 13.7" W
Black Hole CAL	29° 30' 08.5" N	81° 45' 44.7" W
Open South LZ	29° 29' 25.2" N	81° 46' 25.5" W
¾ "Three Quarter" LZ	29° 30' 08.5" N	81° 45' 44.7" W
Moat LZ	29° 30' 04.3" N	81° 46' 08.4" W
Deer Camp CAL	29° 29' 17.0" N	81° 45' 38.2" W

(5) Target Facilities and Restrictions

(a) Rodman Target. The Rodman Target consists of a single target, with a surplus military vehicle at the target center, surrounded by concentric rings of tires at 50 and 100 foot radii. The target is cleared out to a 300 foot radius. The target is equipped with an integral target illumination and lighted run-in-line system for night ordnance training. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

1. Pattern. A right hand pattern for the 150° T run-in-line or heading; and a left hand pattern for the 330° T run-in-line or heading.

2. Authorized Ordnance. BDU-33/MK-76 and BDU-48/MK-106 series ordnance.

3. Restrictions. No ball ammunition, LIVE ordnance, rockets or paraflares.

d. Lake George Target (R-2907 A/B)

(1) Scheduling. Target scheduling is accomplished in accordance with Chapter 6. Paraflare observation services must be requested. For special or unusual target requests, contact FACSFACJAX.

(2) Airspace. Lake George Target lies within Restricted Area R-2907 A/B which will be automatically activated to 11,000 FT MSL (FL110) when the target is scheduled. Restricted Area R-2907 A/B may be activated to 23,000 FT MSL (FL230) if requested.

(3) Communications. Aircrews will contact "SEALORD" on 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 380.8 MHZ when crossing into the MOA. Upon contacting "LAKE GEORGE" the aircrew will be asked to state number and type of aircraft, target requested, requested run-in line, and the number and type of ordnance on each aircraft. Aircrews will be requested to acknowledge the following "LAKE GEORGE" PRE-BRIEF:

Lake George Target Pre-Brief: "No drops on the first run to ensure there are no boats in the target area. Minimum altitude within 2 miles of the western shore is 1,200 FT. Minimum altitude near any building is 500 FT AGL. For multiple runs, the minimum altitude over houses located on eastern side of Drayton Island is 1,500 FT AGL." Prior to first ordnance release, advise "Lake George Target Control" of the run-in-line or heading that will be used for drops."

Aircrews will be advised to maintain VFR, descend on the target, make the first run dry, report positive ID and the target area clear of boats. Once positive target ID is acknowledged and that the target area is clear of boats, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

(a) Northern Target: 29° 19' 12" N 81° 35' 14" W

(b) Center Target: 29° 17' 02" N 81° 34' 42" W

(c) Southern Target: 29° 15' 45" N 81° 33' 59" W

(d) MINEX Splashdown Points:

No. 1: 129.4°T/23,700 FT from IP: 29° 17' 57" N 81° 35' 18" W

No. 2: 129.4°T/26,700 FT from IP: 29° 17' 38" N 81° 34' 52" W

No. 3: 129.4°T/29,700 FT from IP: 29° 17' 19" N 81° 34' 26" W

No. 4: 129.4°T/32,700 FT from IP: 29° 17' 00" N 81° 34' 00" W

Initial Point (Kingsley Point): 29° 20' 27" N 81° 38' 44" W

(e) Spotting Towers

Lake George Pine Island: 29° 18' 40" N 81° 32' 48" W

Lake George Nine Mile Point: 29° 16' 14" N 81° 32' 37" W

(5) Target Facilities and Restrictions

(a) Inert Ordnance Targets. The Lake George inert ordnance range consists of a water surface approximately 2 NM by 7 NM. Within its boundaries are three standard target areas (one scored) and a four (4) target scored MINEX area. Individual target descriptions follow:

1. Northern Target. Consists of a 24-foot square, reflective target center, surrounded by a ring of pilings with a 900 foot diameter. (See Appendix H for target overview)

2. Center Target. Consists of pilings arranged in three concentric rings of 250, 500, and 1,000-foot diameter. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

3. Southern Target. Consists of a 30 by 60 foot rectangular target center (six pilings) surrounded by three concentric piling rings of 250, 500, and 1,000 FT diameter. (See Appendix H for target overview)

4. MINEX Targets. Consists of four pre-planned splash points, on a 129.4° T bearing from the IP located at Kingsley Point, on the southern tip of Drayton Island. The Targets are electronically scored, by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

(b) Pattern. Any run-in-line or heading between 090° and 180° may be used on the standard targets and a bearing of 129.4° T from the IP for the four MINEX targets. If scoring is desired on the center target, "Lake George Target Control" must be informed of the run-in-line or heading for proper WISS alignment.

(c) Authorized Ordnance

1. Northern Target. BDU-33/MK-76, BDU-48/MK-106, BDU45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.
2. Center Target. BDU-33/MK-76, BDU-48/MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance, INERT rockets up to 5 inches in diameter, and paraflares.
3. Southern Target. BDU-33/MK-76, BDU-48/MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.
4. MINEX Targets. BDU-33/MK-76, BDU-48/MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.

(d) Target Facilities and Restrictions

1. Paraflares drops are limited to the Center Target and may be monitored upon request. All paraflare drops must be accomplished from sufficient altitude to ensure complete burnout. Surface wind speed and direction reported by Lake George Target Control may be used as an aid in paraflare drift correction determinations.
2. The Northern Target may be used for low altitude radar ordnance training and searchlight illumination practice only.
3. Restrictions. No ball ammunition, LIVE ordnance or rockets.

CHAPTER EIGHT

LASER OPERATIONS

801. LASER OPERATIONS AT PINECASTLE IMPACT RANGE

a. LASER Pre-Brief. Prior to lasing at Pinecastle Impact Range (R-2910), clearance must be obtained from Pinecastle Control. Pinecastle Range LASER Safety Officer shall perform a range clearance check prior to scheduled LASER missions to ensure there is no encroachment of civilian personnel or standing water puddles in the vicinity of the selected target. Authorized targets are the Red Box, SAM Site, Special Weapons (Main Bull), Live Impact, Mini Convoy, Conventional Day/Night, and Laser Evaluator System Target Board. All aircrews shall be familiar with LASER Hazard Zones and Firing Fans as delineated in the FACSFACJAX Operations Manual. **Upon Check-in with Pinecastle Control for LASER Operations, aircrew will identify the type of laser system to be used.**

b. The conditions of the General Range Procedures and Precautions for the safe use of airborne LASERS and ground-based LASER sections of this chapter shall be met. NAS Jacksonville Detachment (NASJAXDET) LASER range is considered safe for both ground-based and airborne LASER operations, with the following restrictions:

(1) For aircraft systems, only the aircraft-mounted LASER systems listed in Figures 8-40 through 8-43 are permitted. The LASER must be operated from aircraft against the target and within the established firing fans as illustrated in Figures 8-11 through 8-28.

(2) No unprotected personnel will be allowed within the LASER hazard zone (outlined area) per Figures 8-11 through 8-39, unless eyewear of the proper wavelength and Optical Density (OD) are worn as specified in Figures 8-40 through 8-43.

(3) For ground-based systems, only the man-portable LASER systems listed in Figures 8-40 through 8-43 are permitted. The LASER must be operated from Spotting Towers 2-1 and 2-2 against the target area and within the established firing fans as illustrated in Figures 8-11 through 8-21 and 8-29 through 8-39. **NOTE:** Figures 8-40 through 8-43 - The Nominal Ocular Hazard

Distance (NOHD) is the distance from the LASER at which the energy concentration has dropped below the eye protection standard from the LASER being considered. Magnifying optics increase the NOHD. Personnel required to be within the NOHD should have eye protection of the proper wavelength and Optical Density (OD) in place during LASER operations. Figures 8-40 through 8-43 lists the airborne and ground-based LASER systems, which can be safely operated on the Pinecastle Impact LASER Range, their assigned buffer zones, NOHD, and the OD necessary to protect personnel for both aided and unaided viewing of the beam.

(4) Aircraft-mounted LASER systems will only operate against the appropriate targets utilizing the specified operating fans as illustrated in Figures 8-11 through 8-39.

(5) Lasing shall not begin until the aircraft is within five (5) NM and on the approach zone to the appropriate target.

(6) No unprotected personnel will be allowed within the LASER hazard zone. The LASER hazard zone (Figures 8-21 through 8-39) is 150 feet left or right of the LASER line-of-sight extending from the near to far boundary.

(7) Personnel who are required to be within the LASER hazard zone (Figures 8-21 through 8-39) must wear eye protection of the proper wavelength and OD as specified in Figures 8-40 through 8-43.

(8) Aircraft must be on one of the headings or approach zones and at or above the flight profiles contained in Figures 8-11 through 8-21.

c. NASJAXDET is also considered safe for LASER operations utilizing the LASER Designator/Simulator System (LD/SS) in the simulator mode provided the device is placed on any of the targets within the target area per Figures 8-11 through 8-39.

d. The tripod-mounted LD/SS, MULE, or G/VLLD may be safely operated against the Laser Evaluator System (LES) target board provided the system is positioned along the established run-in heading, not more than 2,300 feet away from the location of the target board.

802. Procedures and Precautions for Airborne Lasers

- a. NASJAXDET LASER System Safety Officer (LSSO) shall keep a log showing the date, time and number of firings.
- b. The target and the target area must be free of any specular reflectors (mirrors, glass, still water, etc.).
- c. The range boundaries must be posted to advise the public of the presence of LASER operations.
- d. Unprotected personnel shall not be allowed to view the LASER beam or its specular reflection from within the beam's path and its associated buffer, with or without optics. Such eye protection shall have curved lenses and an OD of six (6) or greater at the LASER wavelength (OD of four (4) is adequate for personnel in other aircraft). The eye protection is adequate to protect personnel under all view conditions for the systems listed in Figures 8-40 through 8-43.
- e. All future targets must be free of mirror-like (specular reflective) objects.
- f. Only the authorized target may be designated or ranged.
- g. Do not designate or range still water, flat glass, mirrors, glazed ice, Plexiglas or any other specular reflector.
- h. Do not designate or range other aircraft.
- i. Prior to lasing, the target shall be positively identified under the crosshairs of the scope or on the operator's monitor.
- j. Lasing shall cease if the operator or range control is dissatisfied with target tracking.
- k. Lasing shall cease if unprotected and/or unauthorized personnel enter the LASER hazard zone.
- l. A fly-over of the range shall be made to ensure that no unprotected and/or unauthorized personnel are in the LASER hazard zone.

m. Lasing shall cease if unprotected and/or unauthorized aircraft enter the operations area or the buffer zone between the lasing aircraft and the target. The buffer zone is defined as a five-degree (half angle) cone surrounding the LASER line-of-sight to the target with the lasing aircraft at the apex.

n. Two-way communications must be maintained between the LASER system operators and all affected range personnel.

o. LASER operations shall take place only on laser approved ranges established in accordance with OPNAVINST 5100.27A and MIL-HDBK-828A.

p. No special precautions are necessary for firing LASERS during rain, fog, or snowfall. Ranges shall be closed to LASER operations if water begins to pond either on the ground, snow or ice. Lasing operations shall cease when standing water is observed.

803. Procedures and Precautions for Ground-Based Lasers

a. NASJAXDET LASER System Safety Officer (LSSO) shall keep a log showing the date, time, place and number of LASER firings.

b. The target and the target area must be free of any specular reflectors (mirrors, glass, still water, etc.).

c. The range boundaries must be posted to advise the public of the presence of LASER operations.

d. All future targets must be free of mirror-like (specular reflective) objects.

e. Only the authorized target may be designated or ranged. The LASER must always be pointed down-range (toward the target).

f. All personnel in the immediate area of the LASER firing position must be behind the operator while the LASER is in use. LASER eye protection is not required for LASER operators or observation personnel viewing the target area with or without binoculars when they remain behind the operator. However, personnel shall never wander into the beam path, its associated buffer, or the LASER target area, without appropriate eye

protection. Such eye protection shall have curved lenses and an optical density of six (6) or greater at the LASER wavelength. This eye protection is adequate to protect personnel under all viewing conditions for the systems listed in Figures 8-40 through 8-43.

- g. Only authorized targets may be designated or ranged.
- h. Do not designate or range still water, flat glass, mirrors, glazed ice, Plexiglas, or any other specular reflector.
- i. Do not designate or range aircraft.
- j. The target must be positively identified under the crosshairs of the scope or on the operator's monitor prior to activation of the LASER.
- k. Lasing shall cease if the operator or the range control is dissatisfied with target tracking.
- l. Lasing shall cease when unprotected and/or unauthorized personnel enter the LASER hazard zone.
- m. The LASER will not be operated or used experimentally outside the range area without such operation being specifically authorized by the local LASER Safety Officer, comm: (352)759-2929).
- n. The LASER exit port of all ground-based LASER systems will be covered by an opaque dust cover when the LASER is located outside the range area or is not in use.
- o. No special precautions are necessary firing LASERs during rain, fog, or snowfall. Lasing operations shall cease when standing water is observed. Ranges shall be closed to LASER operations if water begins to pond on the ground, or if snow, or ice is present.
- p. LASER operations personnel shall read the range SOP periodically and agree to follow it at all times.
- q. Personnel must report to their supervisor immediately any suspected injury or defective equipment (e.g., misalignment of

the LASER beam with the pointing optics) so the appropriate action can be taken.

r. Operation shall be permitted only on the LASER approved range established in accordance with OPNAVINST 5100.27A and MIL-HDBK-828A.

s. Two-way communications must be maintained between the LASER system operators and all affected range personnel.

804. LASER Operations in OPAREA

a. References

(1) Space and Naval Warfare Systems Command (SPAWAR-00F), Open Ocean Laser Safety, Recommendations for Lasing U. S. Naval Ships During Training exercises of 30 September 1993

(2) Laser Safety Review Board Minutes of 13 August 1997; The Nominal Ocular Hazard Distances (NOHD) and Optical Densities (OD)

(3) Laser Safety on Ranges and in Other Outdoor Areas, MIL-HDBK-828 of 15 April 1993.

(4) OPNAVINST 5100.27A Safe Use Of LASERS

805. General

a. Purpose. To establish standard operating procedures for laser operations in the FACSFACJAX (FFJ) AOR.

b. Discussion. The SH-60B and HH-60H Seahawk helicopters are capable of carrying the AN/AAS-44 Laser Targeting/Designator Rangefinder (LTDR) and AGM-114 Hellfire missiles. Due to the power and capabilities of the AN/ASS-44 LTDR these special procedures are established for laser operations in accordance with references (a), (b), (c), and (d).

c. Scope. This chapter pertains to laser operations in the FACSFACJAX AOR by aircraft utilizing the AN/AAS-44 LTDR. Other laser systems should be evaluated on a case-by-case basis for addition to this chapter.

806. Definitions.

Green Range for Lasing: Announcement made by FACSFACJAX Range Control Officer (RCO) that all requirements of this document have been satisfied and participating aircraft are cleared to conduct laser operations. *This does not grant permission to arm or for firing of any ordnance.* Specific hazard zones for any ordnance must be met in accordance with a published Letter of Instruction (LOI).

Laser Eye Protection (LEP): Goggles or visors required for participants in laser operations. Each laser has specific requirements for the frequency and optical density that LEP must cover. Additionally, LEP must be inspected periodically. Pitting, cracking, and scratches on the surface may render the LEP useless.

Laser System Safety Officer (LSSO): An individual, designated by the Officer Conducting Exercise (OCE), trained in laser safety and certified Cat I (Technical and Management) or Cat II (Management only). A LSSO from each unit conducting laser operations shall be present at FACSFAC or in the lasing aircraft during laser operations.

Laser Training Range (LTR): NOTMARED area in which laser operations are conducted. This range encompasses the target area plus required safety buffer areas to account for the laser's Nominal Ocular Hazard Distance (NOHD).

Nominal Ocular Hazard Distance (NOHD): Distance along laser beam that intra-beam viewing will cause injury.

Officer Conducting Exercise (OCE): Officer in charge of Laser Operations. Gives the command "Clear to Arm", "Clear to Lase". This command may be delegated as per the units SOP/LOI for the event. The OCE or designated representative shall be present at FACSFACJAX.

Optical Density (OD): Amount of a specific wavelength filtered by LEP.

Red Range: This call, made at any time and by any unit, cancels any clearance to lase.

807. Laser Training Range (LTR) Location.

Figures 8-44 and 8-45 contain a diagram and coordinates for the LTR. Figure 8-44 covers the period between 01 April and 31 November, Non-Right Whale Season. Figure 8-45 locates the LTR further East for Right Whale Season from 01 December to 31 March.

808. Laser Training Procedures.

Prior to entering the Warning Area, aircraft shall contact SEALORD Control on 133.95 VHF or 267.5 UHF with request to enter the LTR. SEALORD Control will clear the aircraft onto the range and switch the aircraft to Bristol Control on a pre-briefed discreet frequency for commencement of aircraft LTR clearance.

After completing range clearance and ensuring range is clear of contacts, the aircraft commander will request "Green Range for Lasing".

809. Laser Training Range (LTR) Clearance.

The LTR is segmented allowing fouled segments to be restricted from use. Range clearance aircraft will report any contacts in the vicinity of the LTR to Bristol Control. If, after conducting range clearance, there are no contacts within the LTR, then the full LTR is authorized. If any contact is within a segment of the LTR, but other segment(s) are clear, then the RCO may grant "Green Range for Lasing" specifically for the clear segment(s) only by calling both the points of the permitted segment(s) and the firing bearings allowed. The RCO will issue "Green Range for Lasing" after participating aircraft reports range or specific segments clear of contacts, the weather meets requirements, and all participants are wearing Laser Eye Protection (LEP).

810. Lasing.

Lasing aircraft shall call "In Hot" at the beginning of each lasing run. Before each use of the laser, lasing aircraft shall call "Laser On" and after each use of the laser they shall call "Laser Off". At the end of each lasing run, the lasing aircraft shall call "Off Cold". Bristol control shall maintain a log of all pertinent events during the exercise.

NOTE: Any participant that spots a fouler entering the range shall call "Red Range".

811. Training Completion.

After completion of laser operations, RCO will issue "Red Range" and ensure all participants are informed events are complete.

812. Flight Profiles.

a. Lasing aircraft shall only lase within allowed firing bearings from aircraft to target. If the full LTR is authorized, firing bearings are from 045 degrees true clockwise to 135 degrees true. If "Green Range for Lasing" is authorized for only one or more segments of the LTR, then the restricted firing bearing will be specified by the RCO and shall be as described in Figure 8-44 or Figure 8-45 as appropriate.

b. Laser operators shall ensure the laser is never fired above the horizon. As range from the target increases, it will be necessary to increase altitude to maintain laser reticle below the horizon. This altitude will vary depending upon height of target point above the water line. At no time shall aircraft operate below minimum altitudes specified in Squadron standard operating procedures.

813. Safety.

a. Pre-Brief. Before conducting Laser Operations, all participants shall receive a brief specifying conduct of exercise, LEP requirements, role of each participant, and outline of LTR. Prior to commencement of each range period, FACSFAC shall ensure participants acknowledge that they have read and understand this section of the FACSFACJAX Operations Manual.

b. LEP. The AN/AAS-44 LTDR transmits on a wavelength of 1064 nanometers and requires LEP with an OD of 4.0 or greater in that wavelength for unaided viewing. Any aided viewing requires an OD of 5.5 or greater in the 1064 nanometer wavelength and must be specifically cleared by FACSFAC (see paragraph 11.h.). All personnel on participating units and aircraft within the LTR shall wear appropriate LEP. Additionally, personnel shall

periodically perform inspections of LEP.

c. Range Clearance. Range clearance will be the primary responsibility of the lasing aircraft or a supporting asset if the lasing aircraft does not have onboard radar. All units on the range however, have the responsibility of reporting any potential range fouler to Bristol Control and if the fouler may be on an active segment of the LTR, immediately call "Red Range".

d. Notice to Mariners. FACSFAC shall issue a Notice to Mariners to cover the affected target area during laser operations.

e. Laser Employment. The lasing aircraft shall only lase on a positively identified target within the approved laser bearings. Lasing shall be discontinued if the Forward Looking Infra-Red (FLIR) system is not maintaining steady lock on the target. It is the ultimate responsibility of the aircraft commander to ensure the safe employment of the laser.

f. Communications. If at any time participating aircraft are not able to communicate with Bristol Control, they shall assume Red Range and discontinue lasing operations until communication is re-established. Participating aircraft may normally relay information from Bristol Control to participating surface units.

g. Target Preparation. Any target used for laser operations shall be inspected for specular reflection hazards. All bright work, chrome, mirrors, glass, or similar reflective surfaces shall be covered or removed prior to laser operations. Paper or thin plywood is an acceptable covering.

h. Aided Viewing. Any aided viewing of the target using binoculars or any other optic must be cleared through the LSSO to ensure proper NOHD and LEP requirements are followed.

814. Weather Requirements.

Lasing operations shall only be conducted when cloud ceiling and visibility allow VFR operations. The FLIR operator shall have sufficient visibility to identify the target before lasing. Lasing operations shall not be conducted during flat sea state conditions due to specular reflection hazards.