STUDENT HANDOUT

M-16/XM-21 INTRODUCTION

5-294-2
8-294-2
30-294-2
69-294-2

DRAFT

MARCH 1967

UNITED STATES ARMY AVIATION SCHOOL

FORT RUCKER, ALABAMA

DEPARTMENT OF TACTICS
UNITED STATES ARMY AVIATION SCHOOL
FORT RUCKER, ALABAMA 36360

DRAFT
March 1967
File No. 5-294-2
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PERFORMANCE OBJECTIVES

M-16/XM-21 INTRODUCTION

1. KNOWLEDGES: Without references, the student will be able without error to:

   a. List two of the three major components of the M16/XM21.

   b. List the purpose of the cartridge drive on the M16 and the crossover drive on the XM21.

   c. List the two switches on the circuit control box and give a purpose for each.

   d. List the max effective range of the gun systems.

   e. List the constant rate of fire of the automatic gun system and the combined cyclic rate of fire of this machine gun system.

   f. Select from several possible limits the correct flexible limits for the automatic gun system and the machinegun system.

   g. List the effects the M16/XM21 installation has on the auto-rotational characteristics of the UH-1.

   h. List the longest burst of fire that can be delivered by the automatic gun.

   i. List the burst radius of the 2.75" rocket 10 lb. warhead.

2. SKILLS: None.

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ADVANCE SHEET

M16/XM21 INTRODUCTION

PURPOSE: This instruction is designed to acquaint you with the three major components of the M16/XM21 armament systems to include the operation and characteristics, capabilities and limitations of the various components and their effect on the aircraft. This sheet will also briefly cover loading of the automatic gun system.

CONSIDERATIONS:

1. During the last decade the development of armed helicopters has come a long way from the homespun Rube Goldberg devices that heralded our early beginnings.

2. From the two Browning machineguns mounted on the skids of an H-13 we have advanced to the devastating automatic minigun capable of firing 4000 shots per minute. We have added a flexing capability to our guns so they are now directed by the copilot/gunner independently of the helicopter's axis. We have in effect fully armed a flying carpet.

3. By way of clarification, the M16/XM21 armament subsystems covered in this two hour block consist basically of two gun mount assemblies, one ammunition feeding system, a fire control system, machineguns/ or electrically driven automatic guns, and necessary attaching hardware.

4. The M16 consists of a four gun machinegun system and two seven round launcher pods. It weighs 1275 pounds with 6700 rounds of 7.62mm ammunition and 14 2.75" rockets.

5. The XM21 uses two electrically driven automatic guns and two seven round rocket launchers with 6000 rounds of 7.62mm ammunition and 14 2.75" rockets w/10 lb warheads. This subsystem weighs about 1184 lbs.

6. Should a fire or explosion occur in the launchers, they should be jettisoned. Care must be taken when this is done above 80 knots air-

speed as absolute aircraft trim must be assured. These external stores can also be jettisoned when the pilots discretion deems they would impare a successful forced landing.

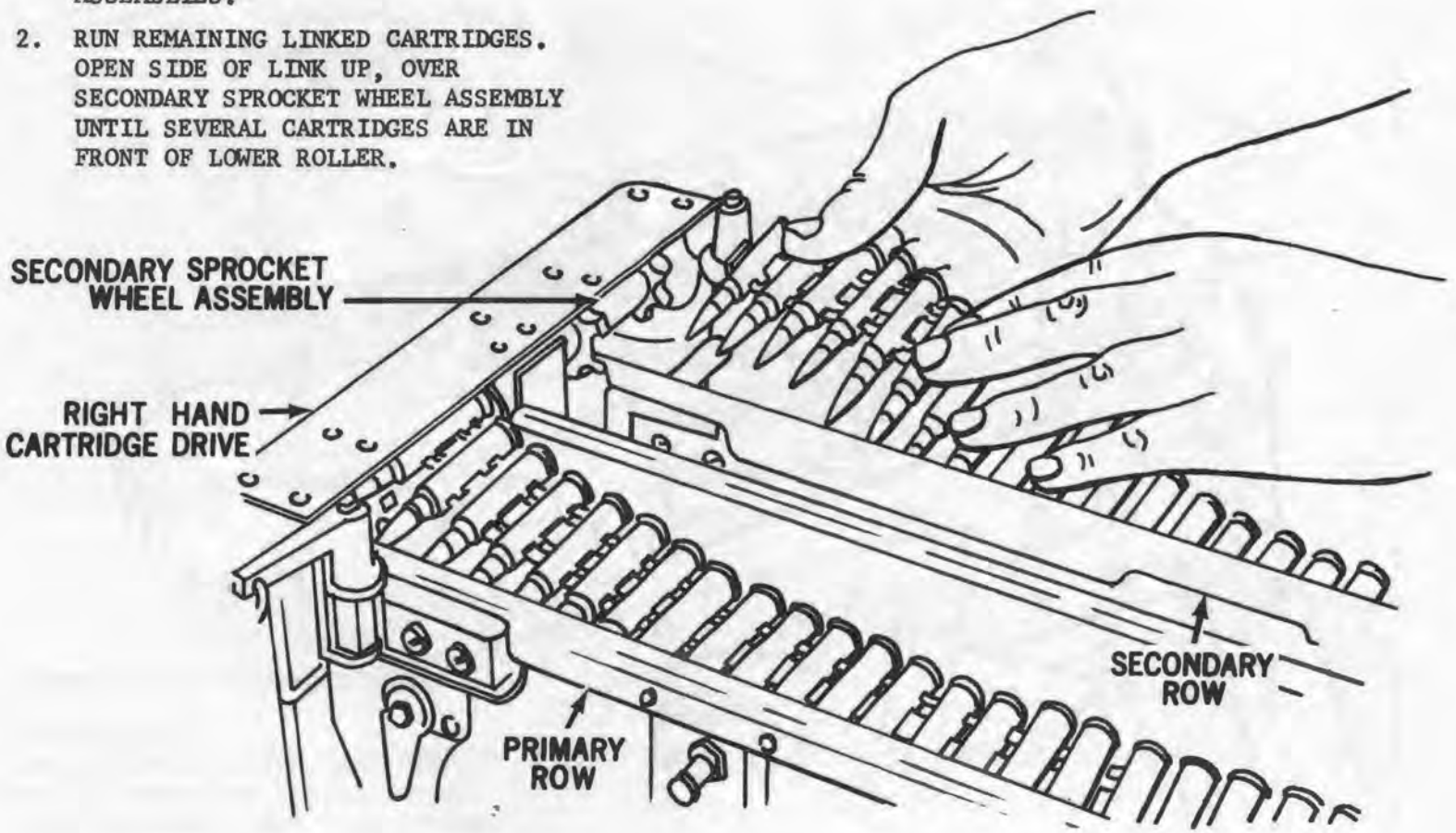
7. The most common cause or stoppages in both of these systems is improper loading. It can also be said that the majority of our problems are operator induced. Because all of you will soon be <u>operators</u> we have inserted the following information.

M6 machine gun, with rocket = M-16

MINIE GUN with rocket XM 21

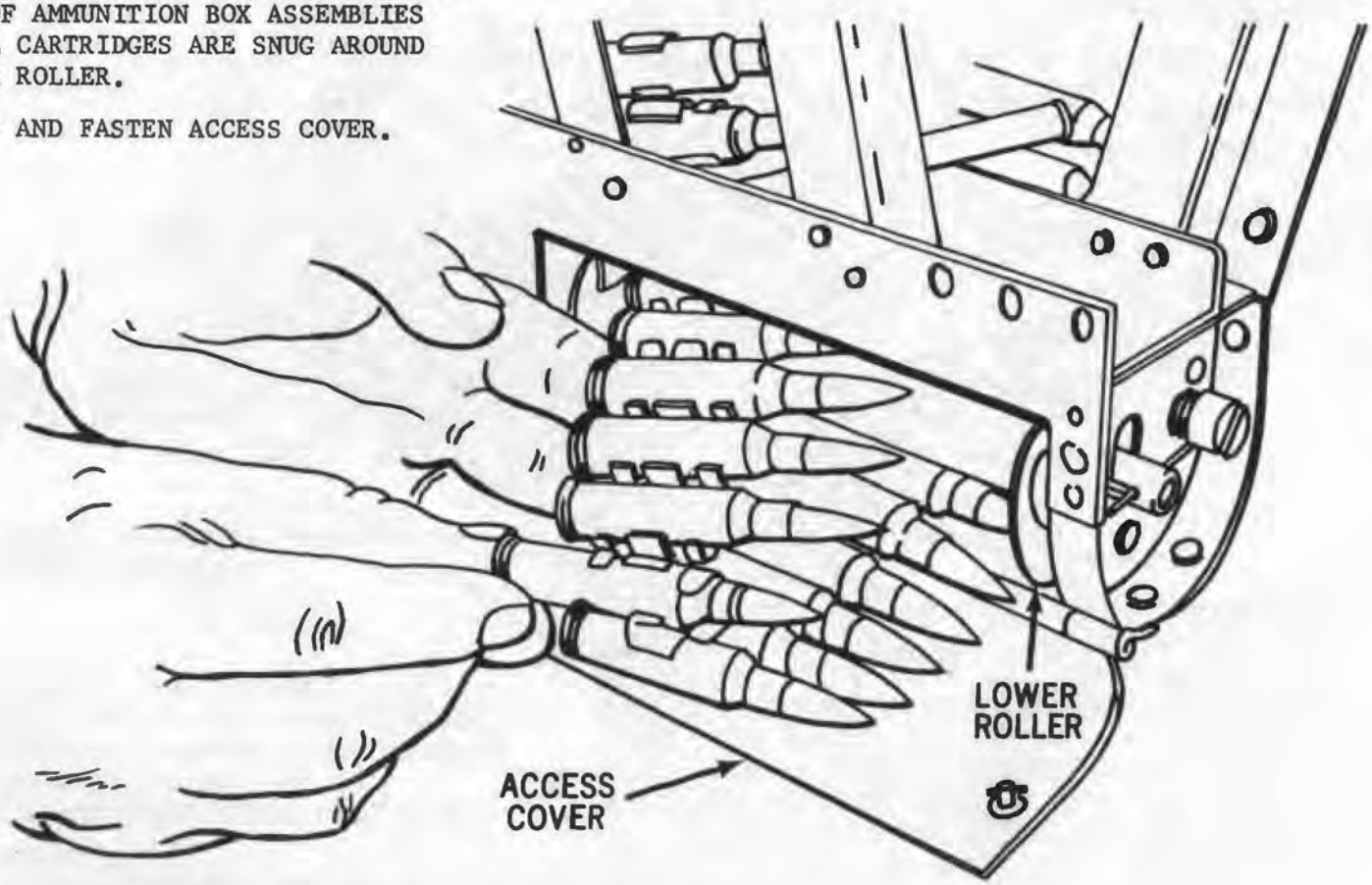
1. START LOADING LINKED CARTRIDGES IN OUTBOARD AMMUNITION BOX ASSEMBLY WITH LINK DOUBLE LOOP END FIRST, BULLETS TO FRONT, AND OPEN SIDE OF LINK UP. FOLD BACK AND FORTH TO FILL OUTBOARD, CENTER, AND INBOARD AMMUNITION BOX ASSEMBLIES.

2. RUN REMAINING LINKED CARTRIDGES. OPEN SIDE OF LINK UP, OVER SECONDARY SPROCKET WHEEL ASSEMBLY UNTIL SEVERAL CARTRIDGES ARE IN FRONT OF LOWER ROLLER.



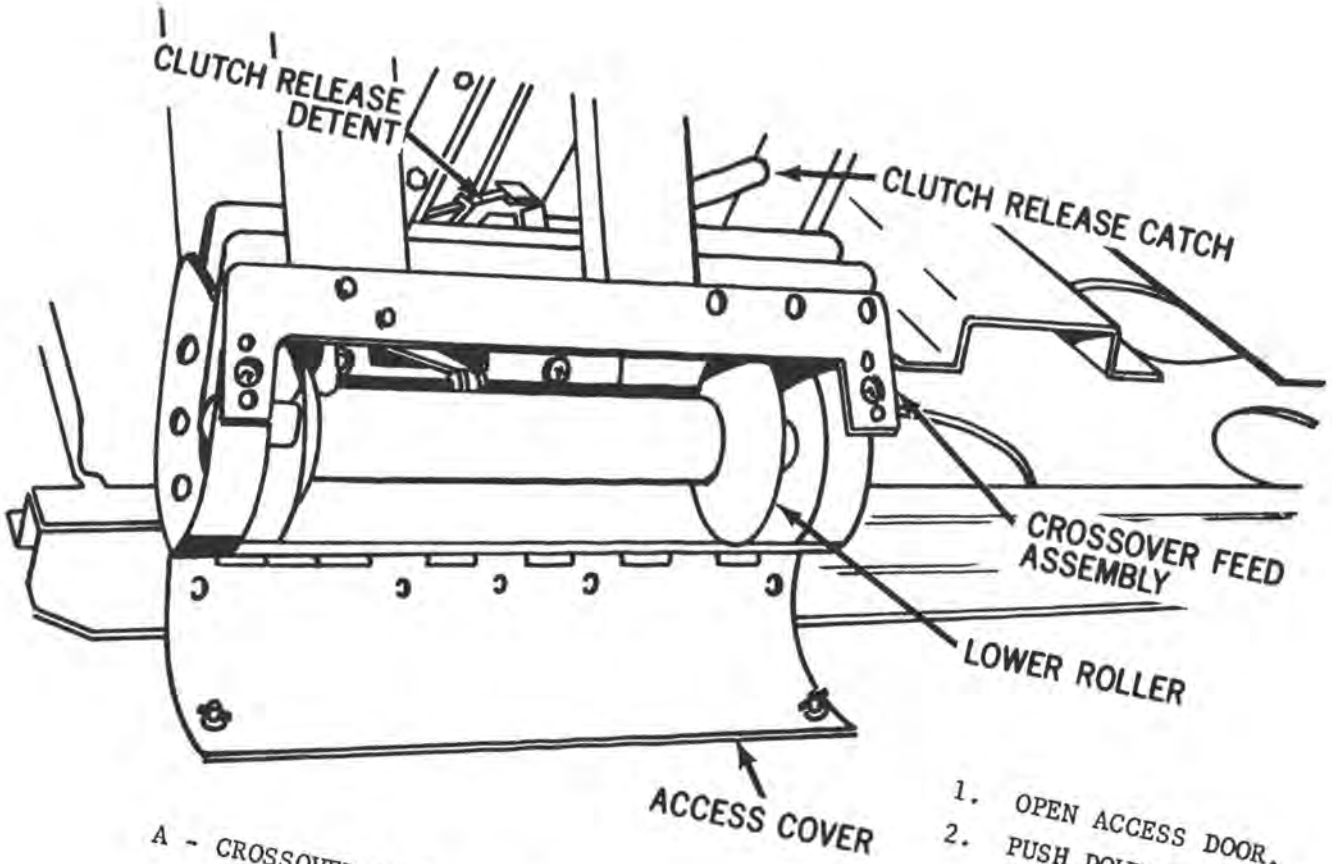
A - LOADING SECONDARY ROW OF AMMUNITION BOX ASSEMBLIES.

1. MATE FREE ENDS OF THE TWO BELTS OF CARTRIDGES AND JOIN BY INSERTING ONE CARTRIDGE IN THE LINK LOOPS.
2. FULL CARTRIDGES BACK INTO SECONDARY ROW OF AMMUNITION BOX ASSEMBLIES UNTIL CARTRIDGES ARE SNUG AROUND LOWER ROLLER.
3. CLOSE AND FASTEN ACCESS COVER.



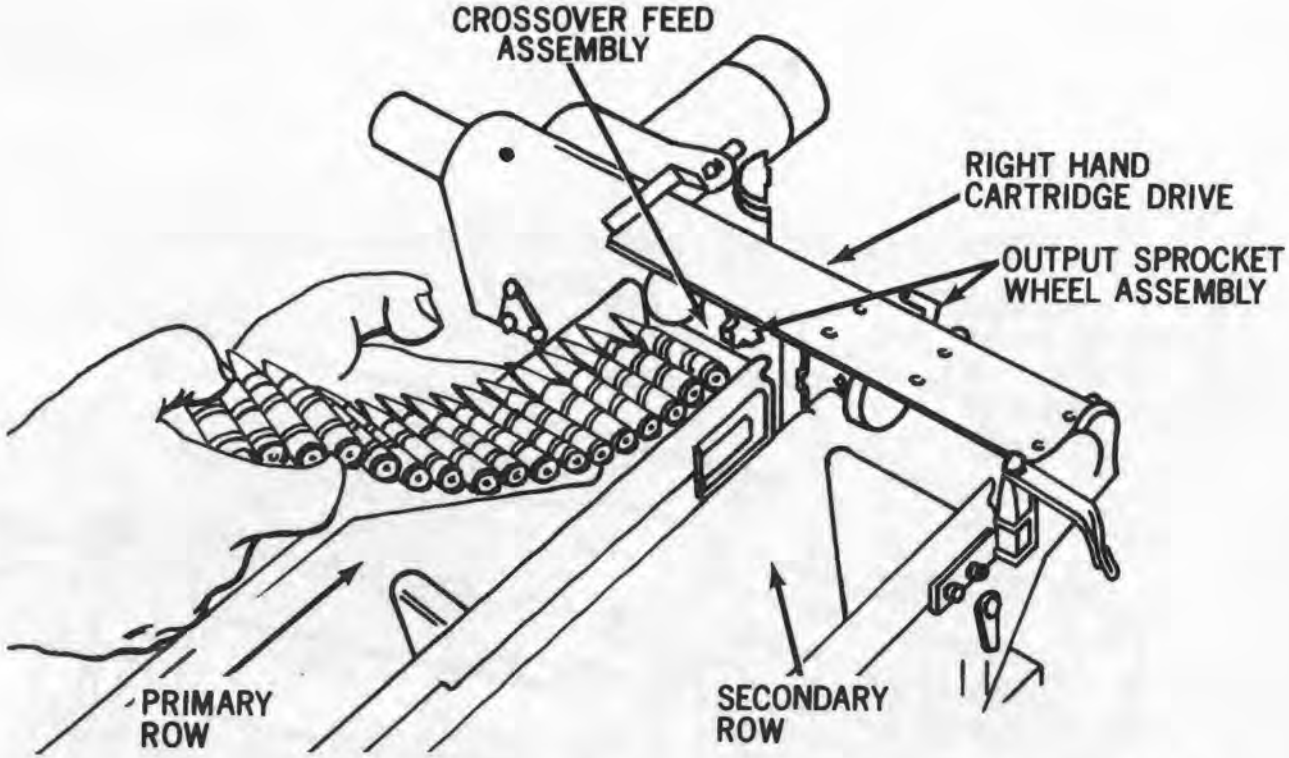
B - JOINING LINKED CARTRIDGES FROM PRIMARY AND SECONDARY ROWS OF AMMUNITION BOX ASSEMBLIES.

FIGURE 14.2 - LOADING CROSSOVER FEED ASSY



A - CROSSOVER FEED ASSEMBLY PREPARED FOR CARTRIDGE LOADING.

1. OPEN ACCESS DOOR.
2. PUSH DOWN ON CLUTCH RELEASE CATCH UNTIL CLUTCH RELEASE DETENT ENGAGES.



1. START LINKED CARTRIDGES INTO CROSSOVER OF RIGHT HAND CARTRIDGE DRIVE WITH LINK DOUBLE LOOP END FIRST, BULLETS TO FRONT, AND CLOSED SIDE OF LINK UP. FEED IN CARTRIDGES UNTIL FOUR OR FIVE PASS UNDER LOWER ROLLER AND LAY ON ACCESS COVER.
2. FOLD LINKED CARTRIDGES BACK AND FORTH TO FILL OUTBOARD AMMUNITION BOX ASSEMBLY, THEN FILL CENTER AND INBOARD AMMUNITION BOX ASSEMBLIES.
3. RUN REMAINING LINKED CARTRIDGES, OPEN SIDE UP, OVER OUTPUT SPROCKET WHEEL ASSEMBLY.

B - LOADING PRIMARY ROW OF AMMUNITION BOX ASSEMBLIES.

FIGURE 14.1 - LOADING CROSSOVER FEED ASSY

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STUDENT OUTLINE

M16/XM21 INTRODUCTION

Period one of two periods.

1. Components.

2. Gun mount assemblies.

   a.

   b. Attaching hardware.

   c. Mounting of guns.

   d. Charger.

   e. Gun mount axis. deflection axis in bound 72° out bound 70°
   elevation 15°
   depression 60°

3. Ammo feed system.

a. Cartridge drive. 2 on each side
electric drive for ammo belts

b. Ammo boxes. 12 AMMO BOXES about 500 rounds each box
use care in loading & install all spacers.
6,700 rounds for system 700 rounds in feed belts.

c. Box tray and tiedown straps.

d. Ammo chutes.

4. Automatic gun. XM-21

a. Gun mounts.

b. Mounting of guns.
guns driven electrical

c. Delinker feeder. strips ammo & feeds the gun.

d. Electric drive motor. 28V DC about 3 HP 6500 RPM.

e. Gun mount axis. deflection same as M6
elevate 10°
depress 85°
12° inboard
70° outboard

f. Ammo feed system

(1) Crossover drives. allows use of (1) 3000 round belt.

Capacity 6400 rounds.
must have covers on the boxes to use.

(2) Ammo boxes.

5. Rack assembly. fits between pilot ammo count.

a. ~~Door~~

b.

c.

d.

e.

f.

g.

6. Launcher pod.

a.

b.

c.

d.

e.

f.

g.

7. Fire control system.

a. Circuit control box M16.

(1) selects switch with eight or four guns.

arm ○
safe ○
off ○

(2) safe charger rod in rear with bolt

(3)

(4) fuse

b. Circuit control box XM21.

off ○ (1) selector switch right or left gun

safe ○

arm ○ (2)

(3)

(4)

c. Intervalometer control panel. Rocket system. off, safe, arm switch

(1) catrol rockets also.

(2) pair selector double the # on selects
for # of rocks fired.

(3) reset button. when re loading
re set selects switch.

(4) jettison switch.

(5)

(6)

(7)

Period two of two periods.

1. Sighting station.

a. Suspension linkage. Flexible sight.

XM21 3 round bursts only [illegible].

(2)

(3) loaded 1184 fully loaded

(4)

b. Controller

(1)

(2)

(3)

(4)

c. Control handle.

(1)

(2)

(3)

2. XM60 reflex infinity sight. Rocket sight for pilot to fire.

trim aircraft before firing rockets.

a.

b.

c.

d.

e.

f.

3. Characteristics and capabilities.

a. M-60C machineguns.

(1) General - parts removed.

(2) Parts added.

(3) Tabulated data

(a) Type air cooled.

(b) Weight (~~4 guns~~) 21 lbs

(c) Length. 43.5

(d) Feed

(e) Rate of fire. 550 RDS/MIN

(f) Range (maximum) ~~2500~~ 3200M.

(g) Max effective range. 750 M

(h) Operation

(4) Ammo capacity.

b. GAU - 2B/A Automatic guns.

Tabulated data.

(1) General

(2) Tabulated data.

(a) Type nine gun.

(b) Weight (w/feeder & drive) 50 lb

(c) Length 30.5

(d) Feed

(e) Rate of fire. both gun 4,800 intrupte united double rate out of 1 gun.

(f) Range (maximum) 3,200

(g) Max effective range. 1,000

(h) Operation electrical

(3) Ammo capacity 6,400

c. 2.75" rockets.

M-16 plus FROM MAX 4,200

(2)

(3)

(4)

(5)

(6)

c. Rockets.

(1) 6. ll warhead 10 lt warhead burst radius 6 & 10 M respectively.

(2)

(3)

(4)

d. Aircraft. Effects & limitations.

(1) limited flexibility of guns.

(2) guns contamination by dirt & sand in field.

(3) more than 12° of nose 50% fire power lost.

(4) automatic guns. dirt & sand. bad.

(5) limited ammo carrying capacity.

XM 24 no clearing system. burst limited to 3 sec.

12 - 20 live rounds overload.

Rockets - weight limitations

use at night blinding.

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PERFORMANCE CHECK

M16/XM21 INTRODUCTION

1. List 2 of the three major components of the M16/XM21.

   a.

   b.

   c.

2. List the purpose of the crossover drive.

3. List the purpose of the cartridge drive.

4. List 2 switches on the circuit control box and give a purpose for each:

   a. _____ purpose:

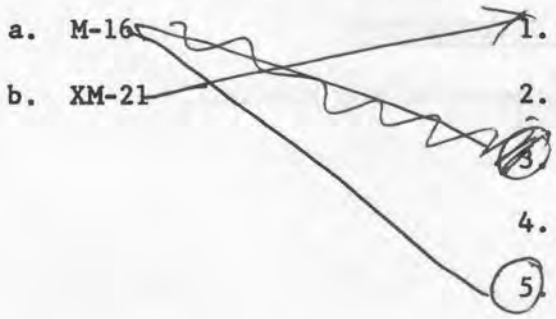
   b. _____ purpose:

5. What is the maximum effective range of the gun systems?

6. What is the constant rate of fire of the automatic gun system?

7. What is the combined rate of fire of the machinegun system?

8. Match the correct flex limits:



a. M-16	1. Up 10, Down 85, Out 70, In 12
b. XM-21	2. Up 10, Down 85, Out 60, In 15
	3. Up 15, Down 60, Out 70, In 10
	4. Up 10, Down 70, Out 60, In 10
	5. Up 15, Down 60, Out 70, In 12

9. What effect does installation have on the autorotational characteristics?

10. What is the longest burst of fire that can be used with the XM21?

11. What is the burst radius of the 10 lb. warhead, 2.75" rocket, the 6 lb. warhead?

M 60 C MACHINE GUN.

air cooled
gas operated
metallic link belt fed.
weight 21 lbs.
rate of fire 550 Rds per min.
effective range 750 M.

9 assemblies.

1 barrele assembly.
2 feed cover "
3 feed tray "
4, trigger actuator
5 lock plate
6. buffer
7. operating rod assembly
8. bolt assembly
9, receiver group

TROUBLE SHOOTING.

* MAC FUNCTIONS SOMETHING NOT RIGHT.
RUNAWAY GUN
COOK OFF
SLOW ACTION

* STOPPAGE DUE TO AMMO OR GUN PARTS

FEED TRAY
DRIVE MOTOR

* MAC FUNCTION IMPROPER OPERATION OF GUN

* STOPPAGE INTERRUPTION OF GUN DUE TO AMMO OR FEED SYSTEM.

CONTACT FLIGHT DIVISION
DEPARTMENT OF ROTARY WING TRAINING
Fort Rucker, Alabama 36360

February 1967

SUBJECT: Student Handout, Local Flying Regulations and Department of Rotary Wing SOP.

TO: All Assigned Students

1. This student handout is a summary of the important flying regulations and policies which pertain to students undergoing rotary wing courses of instruction.

2. It is imperative that each student becomes thoroughly familiar with the contents of this handout in order to promote orderly and safe flight training.

WILLIAM K TOOTHILL
LTC TC
Cmdr, Cont Flt Div

STUDENT HANDOUT

I. TRAINING AREAS

A. Fort Rucker Local Flying Area - The Local Flying Area encompasses a rather large area in that it extends from Milton, Florida (located approximately 15 NM NE of Pensacola) northward to about Selma, Alabama, then toward the east past Montgomery and Opelika to a point 25 NM NE of Columbus, Georgia. From there the boundary turns in a southerly direction, extending to a point approximately 13 NM south of Tallahassee, Florida, and then generally westward to Milton, Florida. The Local Flying Area has several major subdivisions, i.e., Fixed Wing and Rotary Wing Training Areas, in which special restrictions apply. See Local Area Chart posted in each flight room for additional information.

B. Rotary Wing Training Area is confined to an area bounded by a line extending from Hartford, Alabama North to Lake Tholocco thence North to Brundidge, Alabama thence North East on a railroad through Clayton to Eufaula, Alabama; from Eufaula South East to Cuthbert, Georgia. Thence South West to Blakely, Georgia; Columbia, Alabama, Dothan thence to Hartford, Alabama. (Area C) Contact Division R/W Training - 1500' MSL and below. See Inclosure 3, USAAVNC Reg 95-1, Appendix I Annex B.

Area Restrictions

a. All contact flight training will be conducted within the Rotary Wing Contact Training Area unless prior coordination has been made to utilize another area.

b. The maximum altitude within this area is 1500' MSL. Minimum stagefield crossing altitude is 1500' MSL. Normally, at these altitudes no conflict will exist with fixed wing aircraft; however, air crews of aircraft operating immediately south of Hatch Stagefield, Knox Stagefield, and Hanchey AHP are advised to use caution as numerous fixed wing aircraft may be operating at 1700' MSL or below while conducting practice instrument takeoffs from and approaches to Cairns AAF.

c. There is no minimum altitude specified for helicopter training flights within the Rotary Wing Area; however, certain restrictions apply to specific types of maneuvers and in certain locales.

(1) With exception of aircraft taking off or landing, no aircraft will fly over any part of the cantonment area.

(2) Contour flying will be conducted only within the published contour area.

(3) Practice forced landings (power recovery) conducted off the Fort Rucker reservation, will be terminated in sufficient time to prevent the aircraft from descending below 100' above the ground. Practice forced landings may be terminated at a three foot hover in areas marked for sod touchdown (PSP panels on all four sides).

(4) Over cities and towns, the minimum crossing altitude, whenever possible, will be 1000 feet above the highest obstacle within a 2000 foot radius to avoid alleged violations and complaints from surrounding communities. In any case, helicopters will not be operated at altitudes which will endanger personnel or property on the ground. Do not fly over schools.

(5) Aircraft are not permitted to land on civilian property, other than leased confined areas or airfields, except in emergencies. Any emergency landing on unleased property will be reported through Flight Commander to the Operations Branch, Contact Division, Department of Rotary Wing Training.

C. Designation and Use of Training Sites.

1. Confined Areas

a. Confined areas located on leased land off post are marked with two pieces of white steel planking placed parallel, about 10' apart.

b. Areas closed will be indicated by a white "X" on the ground formed by the steel planking.

c. Confined areas located on the Fort Rucker reservation are not marked and may be utilized at any time provided that an adequate reconnaissance has been made and the area is safe for landing.

2. Contour Flying Areas

Area Nr 2 - Fork of Choctawhatchee River east of Highway 231 along north fork of river to vicinity of RT 188.

II. HELIPORTS AND STAGEFIELDS

A. Lowe Army Heliport - See Inclosure 2 and 2a.

B. Stagefields

1. Traffic Patterns, General

a. Specific traffic patterns have been established and published for each of the stagefields utilized by the Department of Rotary Wing Training. Pattern altitudes, entries, departures, and lane usage are specified.

b. Panels are numbered consecutively for each lane starting with the panel nearest to the aircraft on final approach as panel number one.

c. Take-offs will be made from the most upwind panel. All take-offs on the running landing lane will be from a hover.

d. Priority for take-off is to the outside lane. The close proximity of the lanes dictates that extreme caution be exercised during take-off and climbout to maintain proper separation.

e. Prior to any stagefield take-off, a 90° clearing turn will be made toward the running landing lane for normal and steep approach lanes. Those aircraft operating on the running landing lanes will clear towards the downwind. Aircraft operating on the straight-in autorotation lane will clear the straight-in lane utilizing a 90° turn. Aircraft operating on the 180° autorotation lane will make a 270° clearing turn toward the downwind leg, in the direction of traffic, final approach leg, and the lane.

f. Solo students operating aircraft at stagefields will not hover against traffic and will cross lanes only at the landing panels. When a student who is on final approach for landing desires to enter the parking area, he will either make his approach to the landing panel in the parking area, or to a panel which is opposite the parking area on an appropriate lane and, after clearing, hover across the field to the parking area.

g. Go-Around Procedure

(1) Climb to traffic altitude and adjust spacing to conform to other traffic then proceed with normal traffic pattern. Radio call will be made announcing go-around by aircraft identification and lane number.

(2) Go-Around procedure for 180° autorotation lane: If the instructor or student elects to abort an autorotative approach (180°) for any reason, he should first attempt to land with power, short of any obstacle (including other aircraft) that is blocking his approach, then quickly clear the runway. If a termination with power cannot be accomplished, or is not feasible, climb straight ahead to pattern altitude, adjust spacing to conform with other traffic, and remain in closed traffic at all times. Radio call required as in paragraph g (1) above.

h. Stagefield Radio Calls (daytime)

(1) Prior to entry into stagefield traffic, an aircraft will make a radio call on the stagefield frequency to ascertain the direction of traffic. If there are no other aircraft in traffic to answer the call or the tower is unmanned, the pilot will determine the proper direction of landing and enter traffic.

(2) Upon entering traffic, all aircraft will make a blanket call, i.e., "Hunt Control, Iroquois 14368 entering downwind east."

(3) When executing either a servo-off running landing or a low level autorotation, a pilot will make a blanket radio call on base leg indicating his intentions, i.e., "Hunt 1234 left or right base lane ____."

(4) Upon departure from stagefield traffic, all aircraft will report departing traffic and intentions, i.e., "Hunt, Iroquois 14300 departing east traffic for confined area work north of Toth, ETR, 30 minutes."

i. Stagefield Radio Calls (night)

(1) Non essential portions of all radio calls will be omitted. Code letters, i.e., Echo, Whiskey, etc., will be used in place of aircraft numbers.

(2) Mandatory calls.

(a) Entering traffic

(b) Turning base for autorotations

(c) Go-Arounds

(d) Simulated forced landings

(e) Cross field hovering

(f) Departing traffic

(g) Take-off after completion of autorotation.

j. Stagefield flag or smoke signals.

(1) Green flag or smoke - Field opened and manned, crash equipment and stagefield crew available.

(2) Red and green flag or smoke - Field open but not manned.

(3) Red flag or smoke - Field closed.

(4) Yellow flag or smoke - Dual only.

k. Form 1080 will be completed and filed for all flights (see Annex B).

2. Lowe Army Heliport - See Inclosure 1.

3. Goldberg Stagefield - See Inclosure 2.

4. Hatch Stagefield - See Inclosure 3.

5. Hunt Stagefield - See Inclosure 4.

6. Toth Stagefield - See Inclosure 5.

7. Allen Stagefield - See Inclosure 6.

III. GENERAL RESTRICTIONS AND REGULATIONS

A. Maximum Wind Velocity and Gust Spread for Student Training

1. When the wind velocity exceeds 30 knots and/or gust spread exceeds 15 knots, the flight commander will cancel flight operations.

2. 45° to 90° crosswinds in excess of 15 knots preclude safe operations; however, flight operations may be continued dependent upon the stage and type of training in progress.

B. Ceiling and Visibility Minimums

1. Dual Aircraft (IP on board)

a. Flights are authorized within the Fort Rucker Control Zone when the weather is reported to be less than 1000 feet ceiling or three miles visibility; however, clearance must be obtained from Cairns Army Radar Approach Control before making any such flight.

b. Special VFR weather minimums in the Fort Rucker Control Zone are - Rotary Wing Aircraft - 500 feet, one mile visibility.

2. Solo Aircraft

a. Non-rated Rotary Wing Students

(1) Day - 900 foot ceiling, 2 miles visibility.

(2) Night - 1500 foot ceiling, 3 miles visibility.

b. Rated Rotary Wing Students

(1) Day - 700 foot ceiling, 2 miles visibility.

(2) Night - 1000 foot ceiling, 3 miles visibility.

3. Cairns Control Zone

a. Hatch, Hooper, Hunt, and Allen Stagefields and Lowe Army Heliport lie within the Cairns Control Zone. VFR flights within the control zone cannot be made without a controlled VFR clearance when the weather is less than a 1000 foot ceiling and 3 miles visibility. When weather is below these minimums, dual rotary wing aircraft (IP on board) will contact Lowe tower prior to departing Lowe, and when inbound prior to entering the control zone, for a controlled VFR clearance. Solo student aircraft are not permitted to obtain such a clearance and therefore cannot enter or depart the control zone when the weather is less than a 1000 foot ceiling and 3 miles visibility.

NOTE: A solo student who, while attempting to return to Lowe AHP, finds that the control zone is below VFR minimums, 1000 foot ceiling and 3 miles visibility, will land at the nearest stagefield and advise his flight commander through Lowe tower, another aircraft, or stagefield telephone of his location and the situation. The student will not depart the stagefield until instructed to do so by the flight commander.

C. Solo Restrictions

1. Restricted Maneuvers

a. Contour flying - Contour flying and contour approaches will be conducted within the designated contour areas and by dual (IP on board) aircraft only.

b. Students may be cleared by their flight instructors to solo in confined areas. The area must be specified by number and an entry made on the reverse side of the grade slip and a dual aircraft must be present.

c. Autorotations - Students are not authorized to perform solo autorotations.

d. Servo-off Operations - Solo Students, both rated and non-rated, are not permitted to perform or practice simulated servo-off operations.

2. Other Restrictions

a. "Buddy Riding" by Students - Non-rated students are authorized to "buddy ride" only when specially cleared to do so by their instructors. The student in the pilot's seat is in command of the aircraft, and the student in the co-pilot seat is not permitted to operate the controls of the aircraft except as noted herein. In the event of an actual forced landing, the student in the co-pilot's seat may:

(1) Help lower the collective pitch.

(2) Call out rotor RPM and airspeed.

(3) If at night, turn on landing and search lights.

b. Student Flying at Times Other Than During Scheduled Flight Periods - Both rated and non-rated students will not obtain and fly aircraft on their own. Students will fly only during those periods of time when the flight to which they are assigned is flying and will utilize only those aircraft which have been provided by the particular training flight.

c. Flight in Other Than Training Aircraft - Rated students attending a scheduled course of instruction are not authorized to fly fixed wing and/or rotary wing aircraft for the specific purpose of meeting annual flying proficiency requirements.

d. Hovering or Taxiing

(1) Helicopters will not be hovered or taxied within 25 feet of another helicopter or obstacle without the use of a ground guide.

(2) Aircraft will not be parked within 25 yards of any road, vehicle, building, or obstacle that may be considered a hazard.

e. Students will not change seats while in flight.

D. Maintenance Policies

1. Aircraft Inspections

a. Aircraft which will require an inspection, intermediate or periodic, prior to the completion of the planned flight will be signed off by appropriate authority before departing the base field. These extensions will normally be for a 10 hour period. (e.g. An Aircraft that has 98 hours since last periodic inspection is issued for flight.) If you intend to fly the aircraft for 02+30, the 100 hour inspection must be extended before take-off. If the PE is extended for 10 hours at this time, you may complete your planned period and the aircraft is still flyable for an additional 09+30 for that day only not to exceed 10:00.

b. The mission symbol block on the dash 12 will be filled out as follows:

SAMPLE

Student training.

2282
R-T-1

MOI training.

R-T-2

2. Pilots are not authorized to enter or change status symbols, i.e., a red X, dash, or diagonal, on aircraft maintenance forms. Discrepancy writeups should be clear, concise, and complete as possible.

3. The name, rank, service number and mission symbol will be completed in the dash 12 prior to take-off.

E. Forced Landing or Accident

1. In the event of a forced landing all pilots will:

a. Take necessary measures to secure the aircraft against damage by wind or other factors but will take no corrective action mechanically and will not, under any circumstances, attempt to take-off.

b. As soon as possible notify his Flight Commander or base operations (Crash Reporting - Extension 2222), Hanchey, Cairns or Lowe AAF Tower by radio, or another airborne aircraft, giving all information necessary for completion of "Preliminary Report of Forced Landing."

c. Remain with his aircraft until relieved by competent authority except to take the necessary action to comply with the foregoing paragraph.

2. Accidents, Incidents, or Forced Landings.

a. All accidents, incidents, or forced landings, occuring on the ground or while in flight and involving damage to aircraft, damage to property, or injury to personnel will be reported by the most expeditious means to the Flight Dispatch Office (Extension 2222), or Cairns, Lowe, Hanchey, or Shell Tower. Initial report will be made in accordance with Preliminary Report of Accident/Forced Landing (Inclosure 7).

b. In-flight Minor Accidents, Damage, or Injuries.

(1) A student, solo, will, regardless of the extent of damage or injury, execute a landing as indicated below and comply with the provisions of paragraph 1 above.

(2) Rotary Wing aircraft will, whenever possible, be landed at the nearest authorized landing area suitable for landing the aircraft in it's damaged condition.

(3) In the event of precautionary landing, aircraft will not be moved until released by maintenance even if problem is corrected or it is determined that no problem exists.

F. AUTHORIZED SOLO MANEUVERS BY STUDENTS

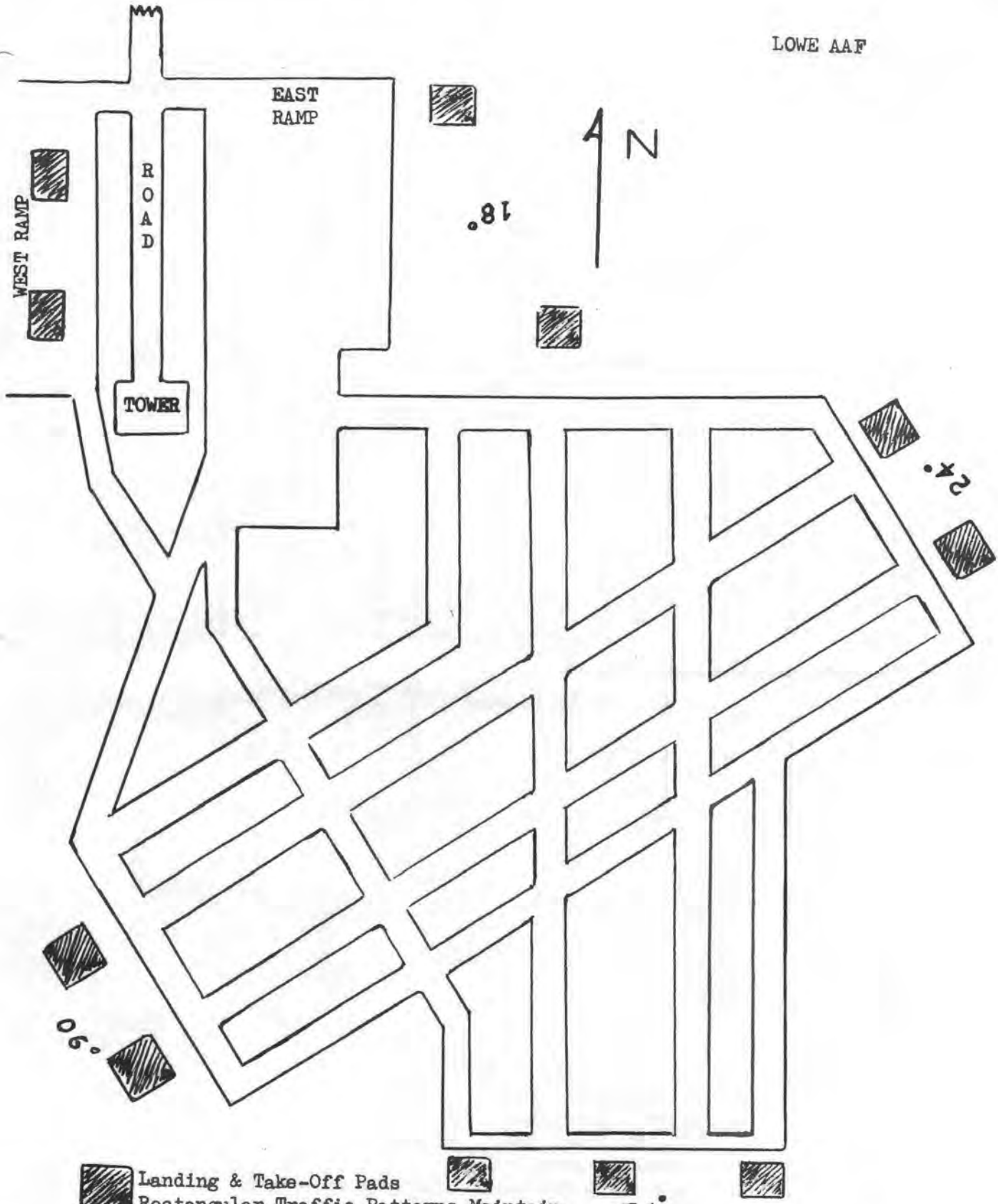
1. Preflight Inspection
2. Cockpit Procedures
3. Take-Off to Hover
4. Landing from Hover
5. Hovering Flight
6. Normal Take-Off from Hover or Ground
7. Normal Approach to Hover or Ground
8. Airwork
9. Traffic Patterns
10. RPM Warning System
11. Decelerations
12. Crosswind Approaches and Landings
13. Local Area Orientation
14. Flight in Turbulent Air
15. Internal Loads
16. Maximum Performance Take-Off
17. Steep Approach
18. Confined Areas (Provided Dual Aircraft Accompanies Student & Has Been Cleared)
19. Night Approaches and Take-Offs (Normal) and Minimum Lighting
20. Loads, Internal, Maximum (When Cleared by IP)

G. PROHIBITED MANEUVERS BY SOLO STUDENTS

1. Any Type Autorotation
2. Any Practice Forced Landing
3. Pinnacle Operations
4. Slope Operations
5. Ridge Operations
6. Any Practice Maneuver with Servo Off
7. Any Practice Emergency Governor Operations
8. External Loads
9. Rearward Flight (Without Ground Guide)
10. Contour Flying

H. AIRCRAFT PARKING AT LOWE (Inclosure 8)

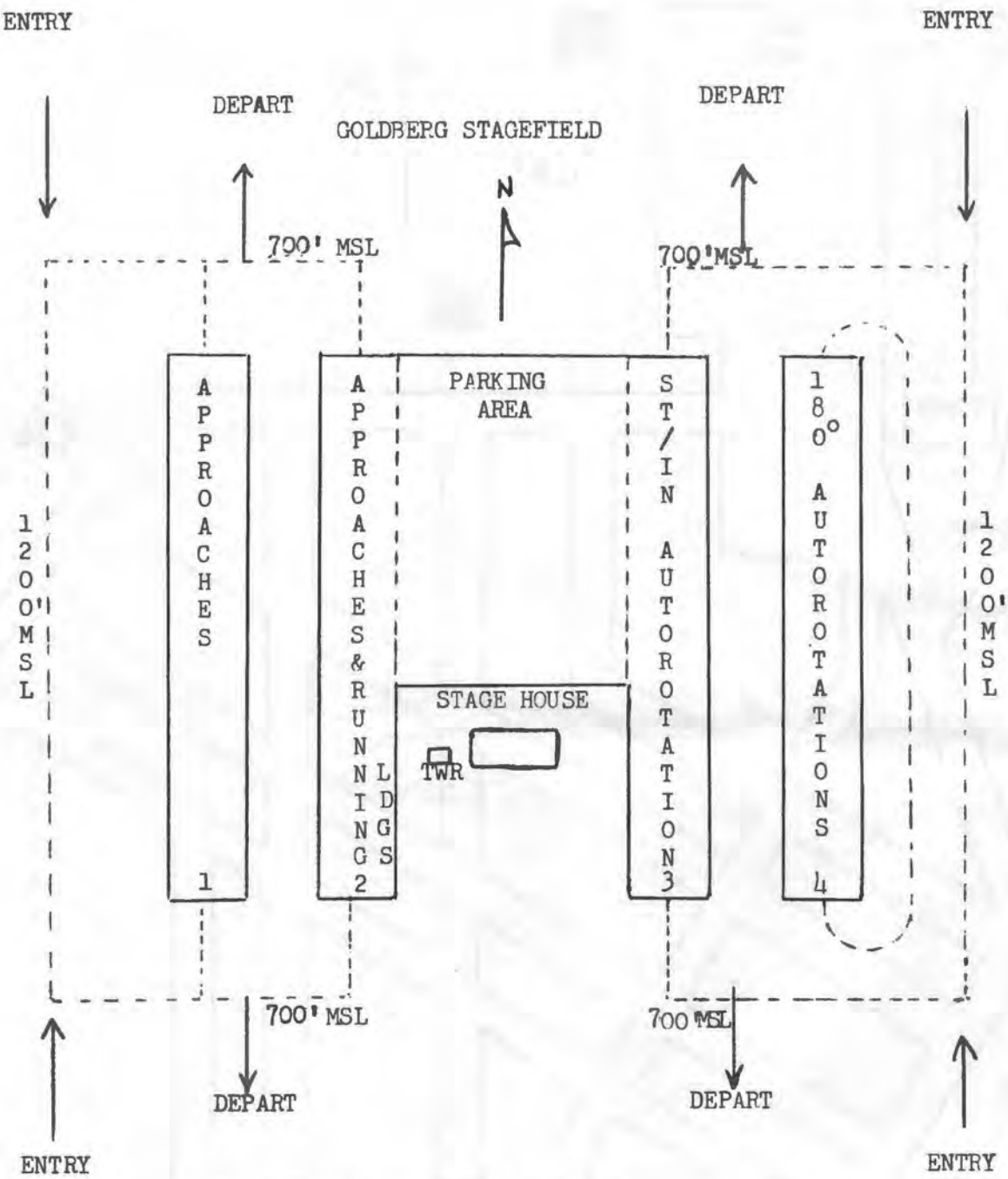
LOWE AAF



Landing & Take-Off Pads
Rectangular Traffic Patterns Maintain
1000' Downwind, Descend to 700' Base
Outbound Traffic Depart Straight Out, Maintain 500' until clear of
Traffic Pattern or 1 Mile Out.

INCLOSURE 1

STUDENT TRAINING

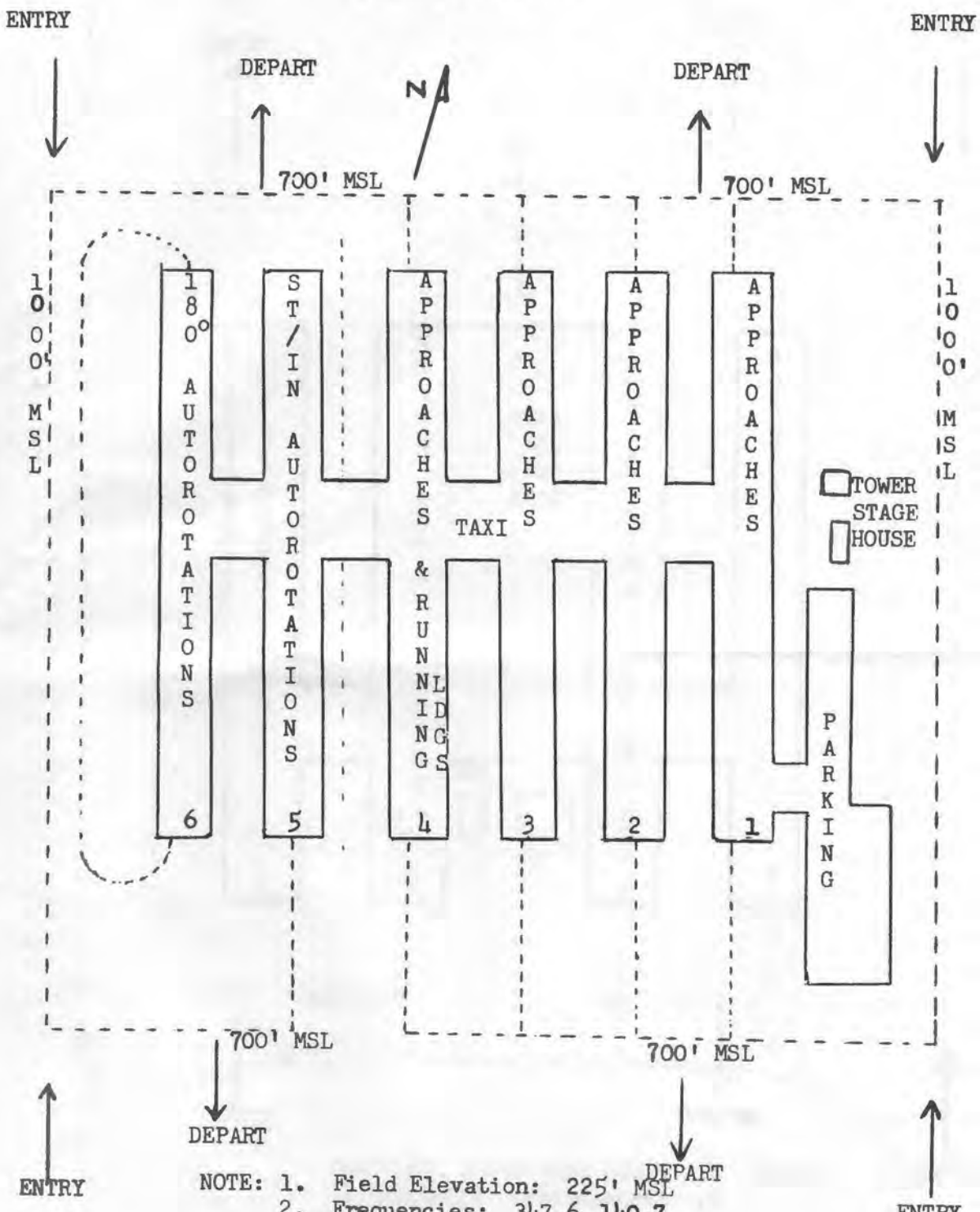


NOTE:
1. Field Elevation: 355' MSL.
2. Frequencies: 366.2
3. Traffic Altitude: 1000' MSL.
4. Location from Lowe: 16 miles compass heading 060°
5. Lighting Conditions: Complete Facilities

INCLOSURE 2

STUDENT TRAINING

HATCH STAGEFIELD

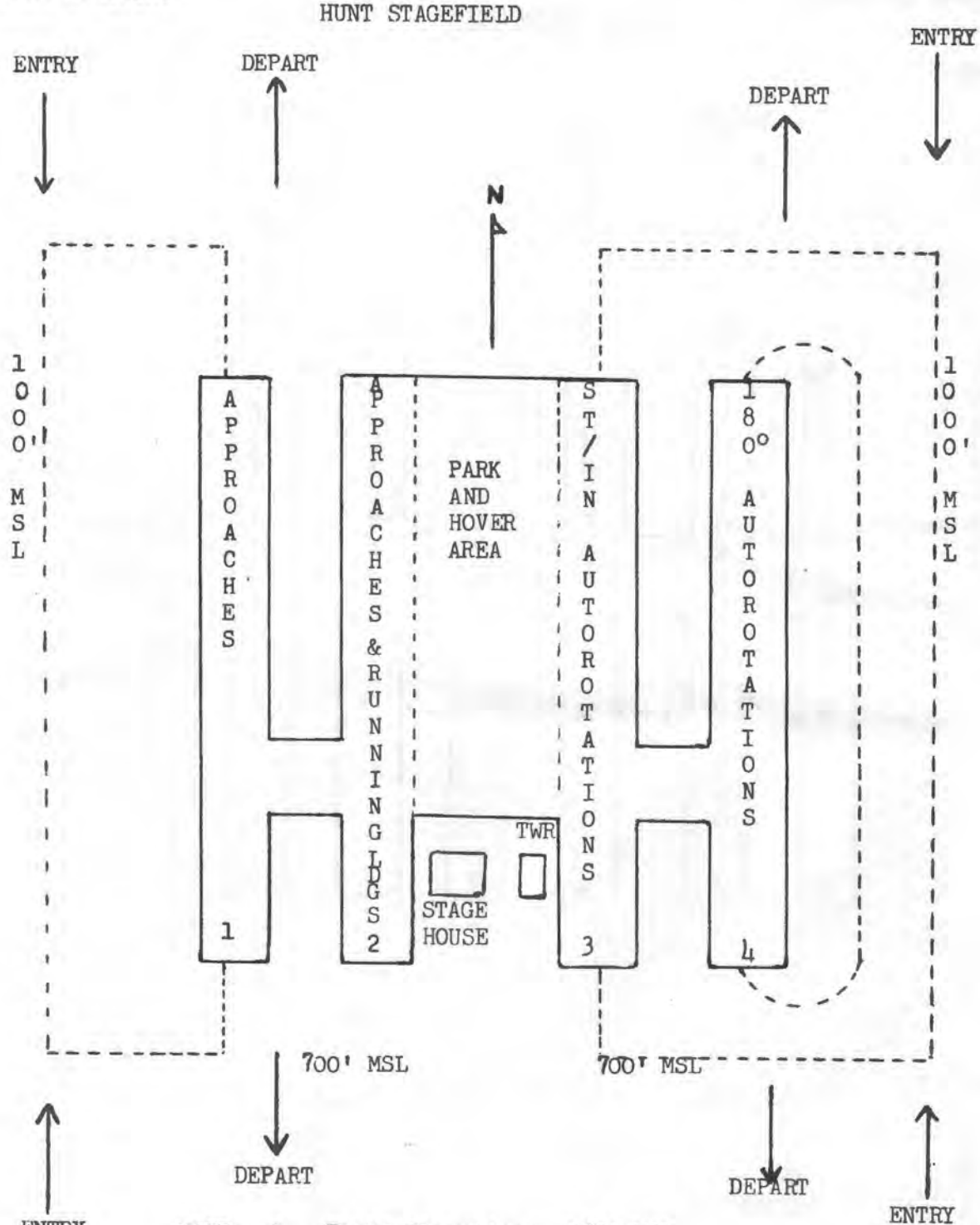


NOTE:
1. Field Elevation: 225' MSL
2. Frequencies: 347.6 140.7
3. Traffic Altitude: 1000' MSL
4. Location from Lowe: 7½ miles compass heading 085°
5. Lighting Condition: Flare Pots

INCLOSURE 3

STUDENT TRAINING

HUNT STAGEFIELD

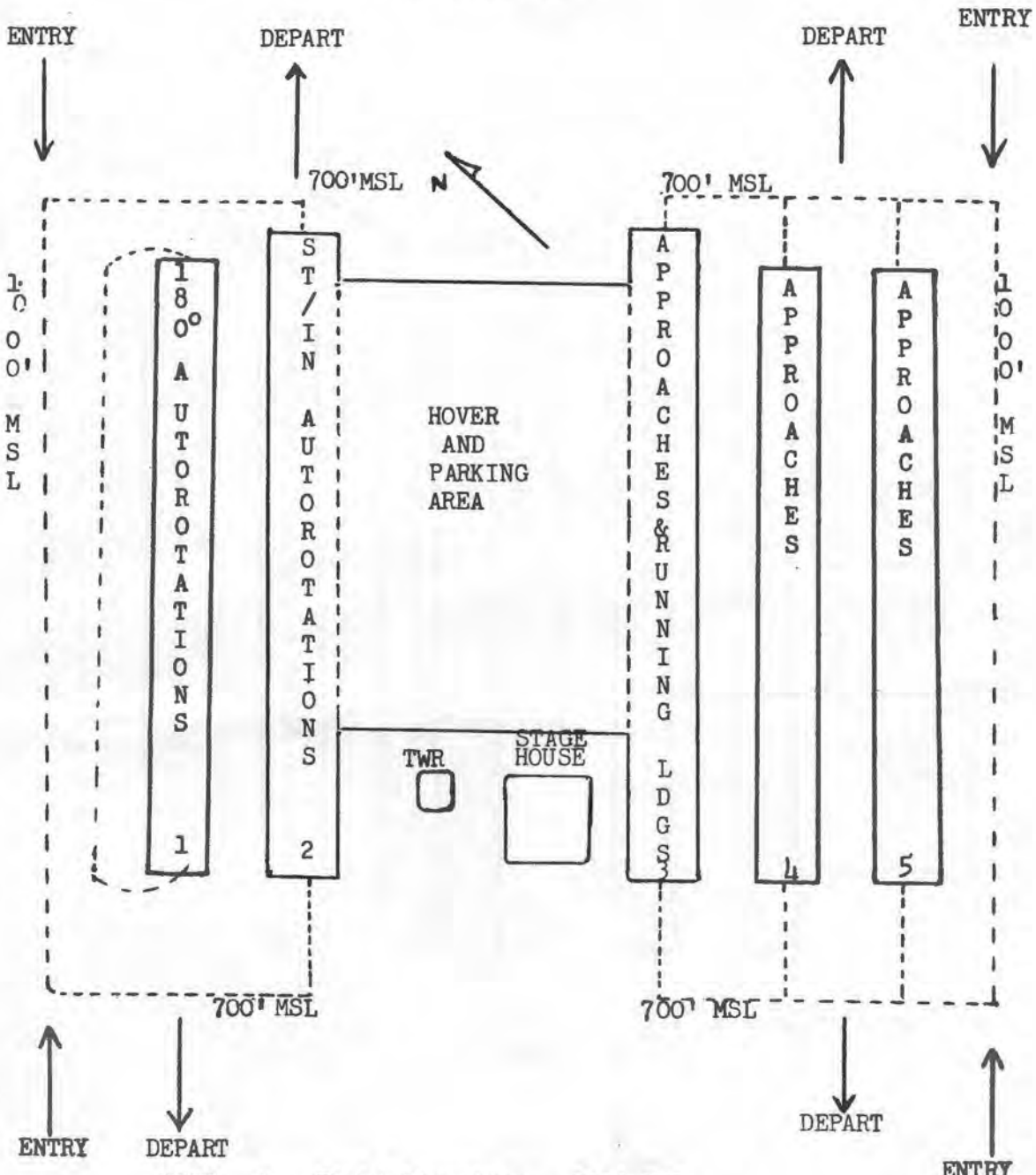


NOTE:
1. Field Elevation: 250' MSL
2. Frequencies: 233.8/142.6
3. Traffic Altitude: 1000' MSL
4. Location from Lowe: 10 miles compass heading 080°
5. Lighting Condition: Complete Facilities

INCLOSURE 4

STUDENT TRAINING

TOTH STAGEFIELD

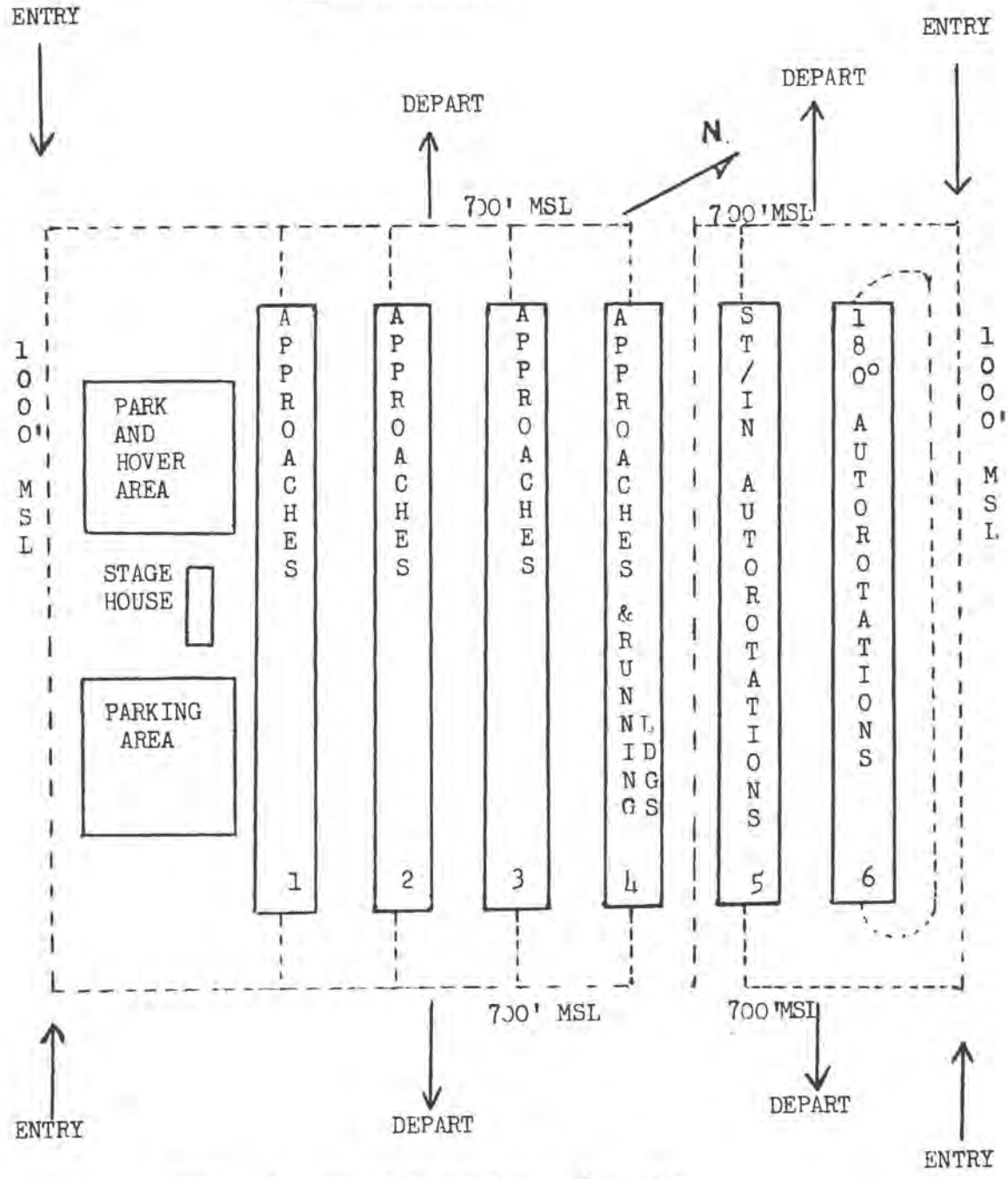


NOTE:
1. Field Elevation: 300' MSL
2. Frequencies: 389.4 149.9
3. Traffic Altitude: 1000' MSL
4. Location from Lowe: 13 miles hdg 130°
5. Lighting Condition: Complete facilities

INCLOSURE 5

STUDENT TRAINING

ALLEN STAGEFIELD



NOTE:
1. Field Elevation: 345' MSL
2. Frequencies: 226.4 143.4
3. Traffic Altitude: 1000' MSL
4. Location from Lowe: 10 miles compass heading 145°
5. Lighting Condition: Portable Flare Pots

INCLOSURE 6

SAMPLE ANNEX SAMPLE

PRELIMINARY REPORT OF ACCIDENT/FORCED LANDING

DATE/TIME GROUP	INITIAL	RECALL	REPORT NO.
141300 FEB 66			

1. TYPE, NUMBER AND CONDITION OF AIRCRAFT

UH 1-B 76130 Tailrotor blades damaged

2. LOCATION

Confined area #108 Grid 44 Tango

3. NUMBER AND EXTENT OF INJURIES

No injuries

4. BRIEF DESCRIPTION OF ACCIDENT/FORCED LANDING

Tailrotor blades struck tree branches while doing confined area work

EQUIPMENT DISPATCHED:

YES	NO	
☐	☒	Crash L-19
☒	☐	Crash Helicopter
☐	☒	Ambulance
☐	☒	Crash Truck

6. REMARKS:

YES	NO	UNKNOWN	
☐	☒	☐	a. Is the A/C on fire at this time?
☐	☒	☐	b. Is the A/C leaking fuel?
☐	☒	☐	c. Are there personnel trapped in the A/C?

IP Nonwatcher P. CWO W21593812

SP Pinks S WOC RA25950818

SIGNATURE OF INDIVIDUAL RECEIVING REPORT

Signed

USAAVNC Form 595, 26 Jun 64 (Rev) Prev edition may be used until stock is exhausted.

INCLOSURE 7

PROCEDURES FOR REPORTING ACCIDENT/FORCED LANDING

1. On actuating the primary or secondary net the Crash Control Center Operator will follow the format listed below:

2. The situation is as stated: U6A 1657 crashed and burned at TAC 20; Grid Coordinates 44T. Time is 170755C and personnel condition unknown. No remarks.

Procedure for Dissemination: Repeat only once, the following information:

Standby to copy accident report

170755C Aug 63 - Initial - Report No. 1

No. 1 U6A 1657 crashed and burned

No. 2 TAC 20 Grid 44 Tango

No. 3 Unknown

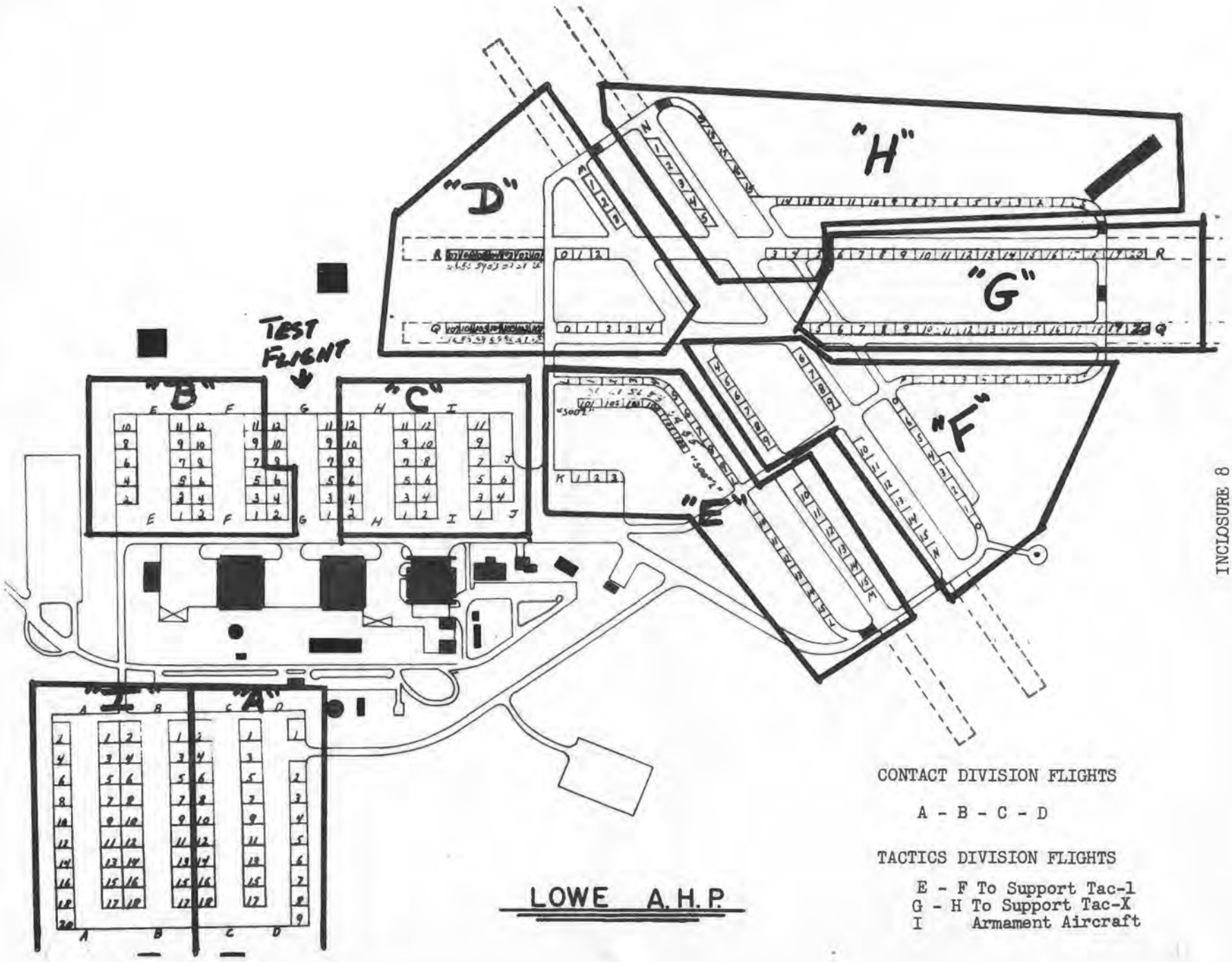
No. 4 Aircraft experienced engine failure on take-off

No. 5 None

No. 6 Remarks None

Are there any questions?

3. Those agencies having questions will ask for clarification at this time. Those having no questions will hang up immediately.



LOWE A.H.P.

CONTACT DIVISION FLIGHTS

A - B - C - D

TACTICS DIVISION FLIGHTS

E - F To Support Tac-1
G - H To Support Tac-X
I Armament Aircraft

INCLOSURE 8

LOCAL FLIGHT CLEARANCE

STATION		DATE
Lowe AHP		16 Feb 67
TYPE A/C: UH-1B	A/C NO.: (5 Digits)	MISSION: T

OCCUPANTS *(State whether crew or passenger. List additional passengers on reverse.)*

DUTY SYMBOL	NAME AND INITIALS	GRADE	SERVICE NO.	HOME STATION
	1st PD			
IP	Doe, James L.	CPT	016987	Lowe
SP	Johns, William E.	WOC	RA2267196	2nd period: Passenger Hunt to Lowe
Z	Dimwit, Peter P.	WOC	US2671090	Lowe
	2nd PD			
IP	Doe, James L	CPT	016987	Lowe
SP	Dimwit, Peter P.	WOC	US2671690	1st period: Passenger Lowe to Hunt
Z	Johns, Wms E.	WOC	RA2267196	Lowe

ETD	ETE *(Home base)*	HOURS OF FUEL	AUXILIARY BASE OF 1ST INTENDED LANDING
0700 Z	04+30	02+00	Hunt

FORM "F" FILED AT	DATE FILED *(Day, month, year)*
N/R	N/R

WEATHER IS FORECAST TO REMAIN VFR FOR THE DURATION OF THIS FLIGHT. I AM FAMILIAR WITH ALL CURRENT REGULATIONS AFFECTING THIS FLIGHT AND THIS FLIGHT WILL BE CONDUCTED IN ACCORDANCE WITH SUCH REGULATIONS.

CLEARANCE AUTHORITY	PILOT'S SIGNATURE
AR 95-1 & 2	
ACTUAL DEPARTURE	**ACTUAL ARRIVAL**

REMARKS

Refuel as Necessary _____.

Class Number _____.

Branch _____, Flight _____.

Phone _____.