

Minot Airspace and Local Flying Area

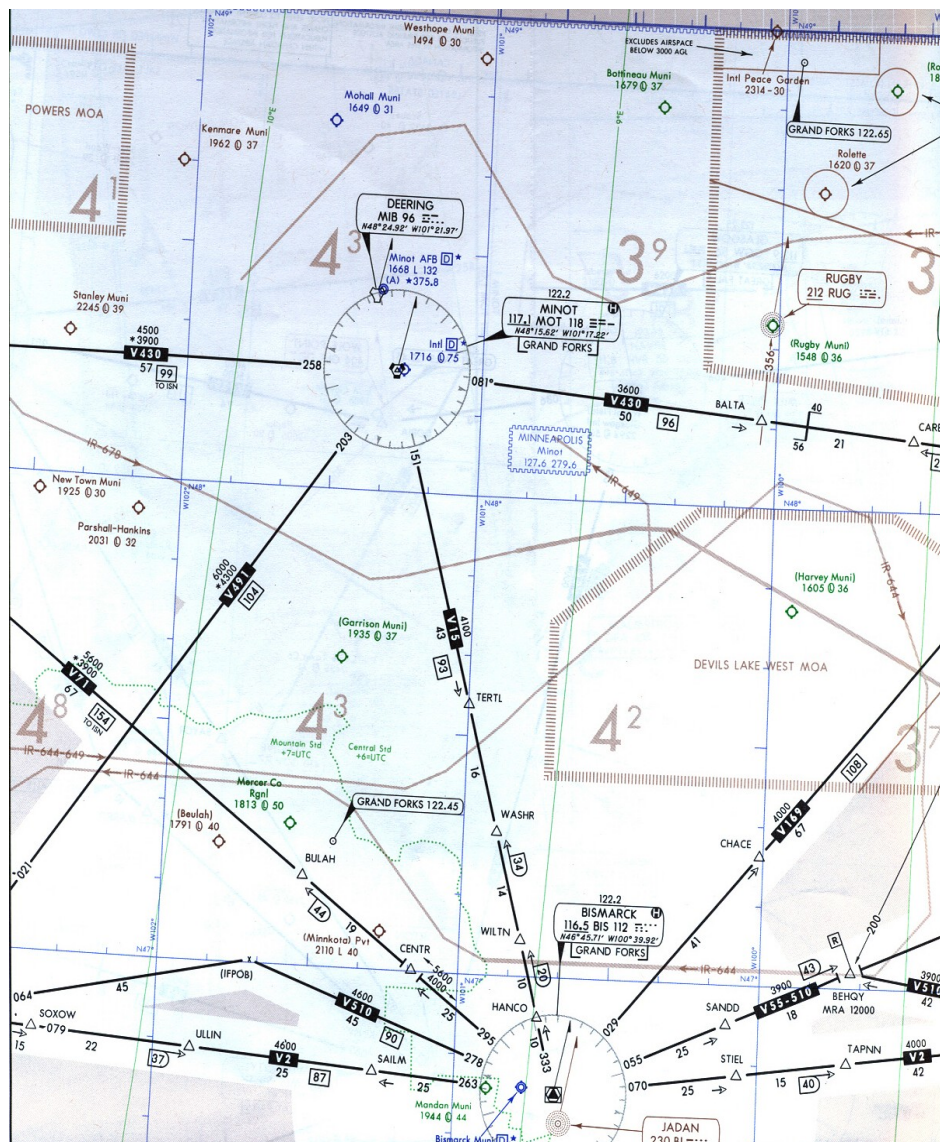


Figure 6



MID-AIR COLLISION AVOIDANCE



5th Bomb Wing
91st Space Wing
Minot AFB, ND



Caution: For Informational Use Only
Not Intended for In-flight Use

IR-485: Low level operations will be conducted starting at MLS 344/57 and ending at RAP 282/64. This route travels North-West of Ellsworth AFB allowing military aircraft to initiate maneuvers in the Power River MOAs. This route is scheduled through Ellsworth AFB, SD. C: 605-385-4246

IR-492: This training route begins at Aberdeen 280/35 (ABR 280/35) winding its way North-West into Montana, then veers South through the Powder River MOAs and exits at RAP 282/64. It is used primarily by B-1 Bombers out of Ellsworth AFB. Scheduled entry times are set by Ellsworth AFB, SD. C: 605-385-4246

IR-644: Starting south west of Minot AFB, this route begins at MLS 053/91 and works east looping back on itself prior exiting at Bismark 308/58 (BIS 308/58). Military aircraft may coordinate to enter the Devils Lake MOAs prior to exiting the route. Scheduling authority is Minot AFB, ND. C: 701-723-2002/3527

IR-678: Entering IR-678 at Williston 006/31 (ISN 006/31), just north of Garrison, ND, military aircraft will wind their way south and east of the town of Minot ND, before starting a loop back to the west before reaching Grand Forks AFB. This route exits half way between Minot AFB and the town of Minot at the Minot 282/24 (MOT 282/24). Military aircraft may schedule maneuvers in the Devils Lake and Tiger MOAs prior to exiting the route. Scheduled times are coordinated through Minot AFB. C: 701-723-2002/3527

Note: For additional route information and a graphical depiction of training routes, please refer to the Billings and Twin Cities sectionals. Additional information can be received through your local FBO as well as the Grand Forks Flight Service Station (FSS).

Special Use Airspace

Powder River Military Operating Areas: Divided into two separate sections along the Wyoming/Montana border (southwest of Minot), the Powder River MOA provides military aircraft maneuvering airspace as well as low level transition. The point of contact is Ellsworth AFB, SD. C: 605-385-4246

Devils Lake MOAs: Located southeast of Minot AFB, the Devils Lake MOA consists of an east and west section. Military aircraft may be continuously scheduled within the confines of the area by McChord AFB, WA. C: 253-982-4604

Tiger MOAs: Located east of Minot along the Canadian border, the north and south portions of this MOA are scheduled through McChord AFB, WA. C: 253-982-4604

Powers MOA: The Powers MOA is located northwest of Minot Air Force Base. Scheduling and coordination are provided through MAFB, ND.

Note: See the Billings and Twin Cities sectionals for additional information concerning military training areas in the local flying area. Additional information on the MOAs can be obtained through the local flight service station.

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Minot Air Force Base and Surrounding Airspace

Minot AFB is located along Highway 83, one of the major north/south highways in North Dakota. This road also serves as a flyway for air traffic transiting through the center of the state. Surrounding the air base are numerous small airfields (see Figure 6, Note: The charts in this pamphlet are excerpts from sectionals and DOD instrument approach plates and are for information only. **They are not intended for in flight use.**), where most of the flying is done using Visual Flight Rules (VFR). To aid in safe aircraft separation, Minot Approach Control offers flight following in the local flying area. Figures 2, 3, and 4 depict the flight paths generally used by military aircraft in the vicinity of Minot AFB. Of special importance is the area located within Minot's Class D airspace (see the Billings Sectional). Before transiting this area below 2500' AGL (or 4168' MSL) within 5.2 nm of the field, all pilots are required to contact Minot AFB Control Tower and remain in radio contact with them while flying within the designated airspace.

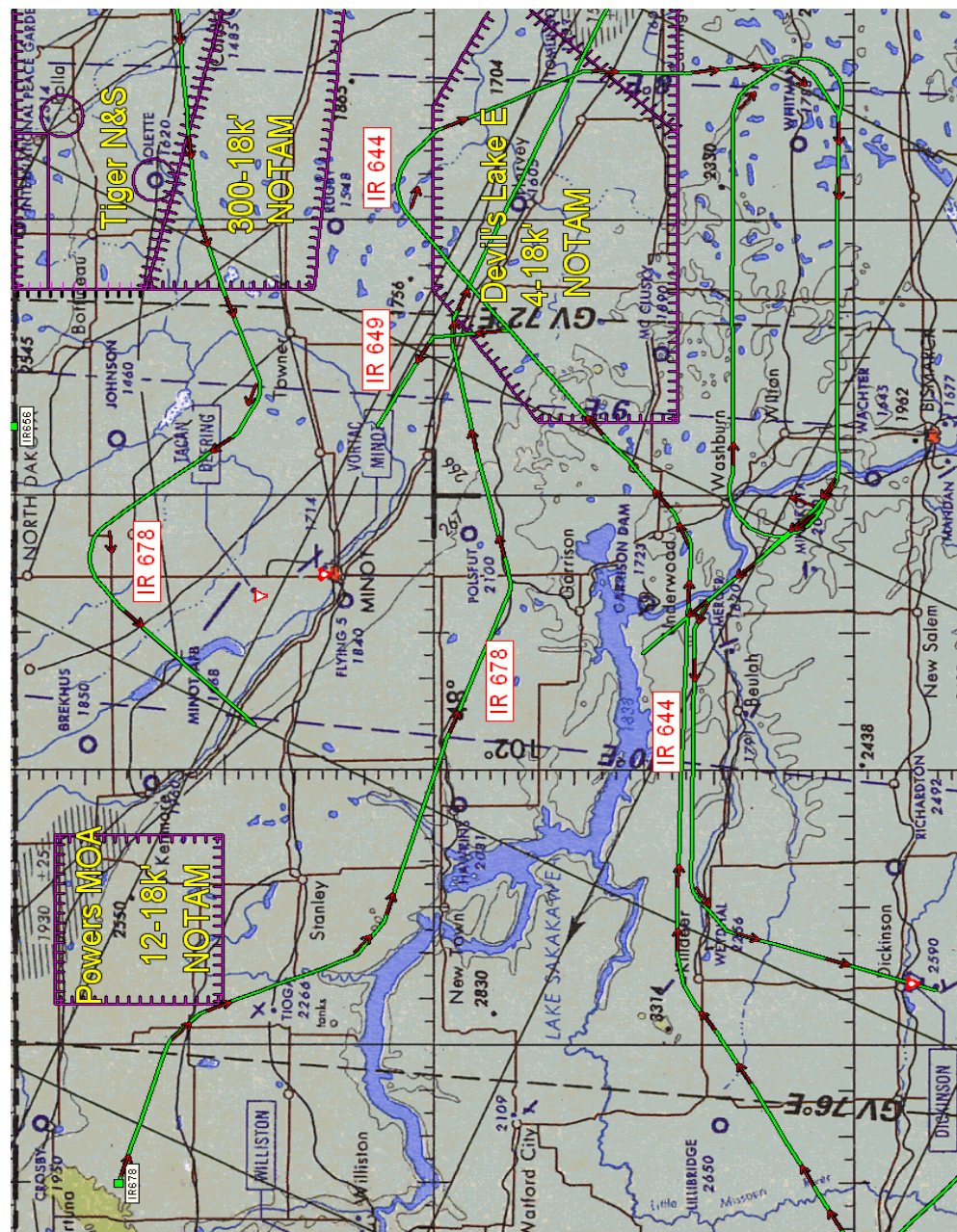
Minot AFB tower, however, is not open 24 hours a day. When it is closed, the airspace becomes Class E and pilots should make traffic advisory calls per the AIM. Pilots are also reminded to **avoid direct over-flight of all base facilities** for safety and noise abatement considerations.

When the airfield is open, it is important to understand that the military aircraft flying in and around the Minot area will be following both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). The specific altitudes that they will be flying are depicted in the attachments located in this pamphlet. Figures 3, 4, 5 and 6 provide a general location of military training in the local area. Although all pilots are required to use the "See and Avoid" concept, an idea of where to look can be invaluable.

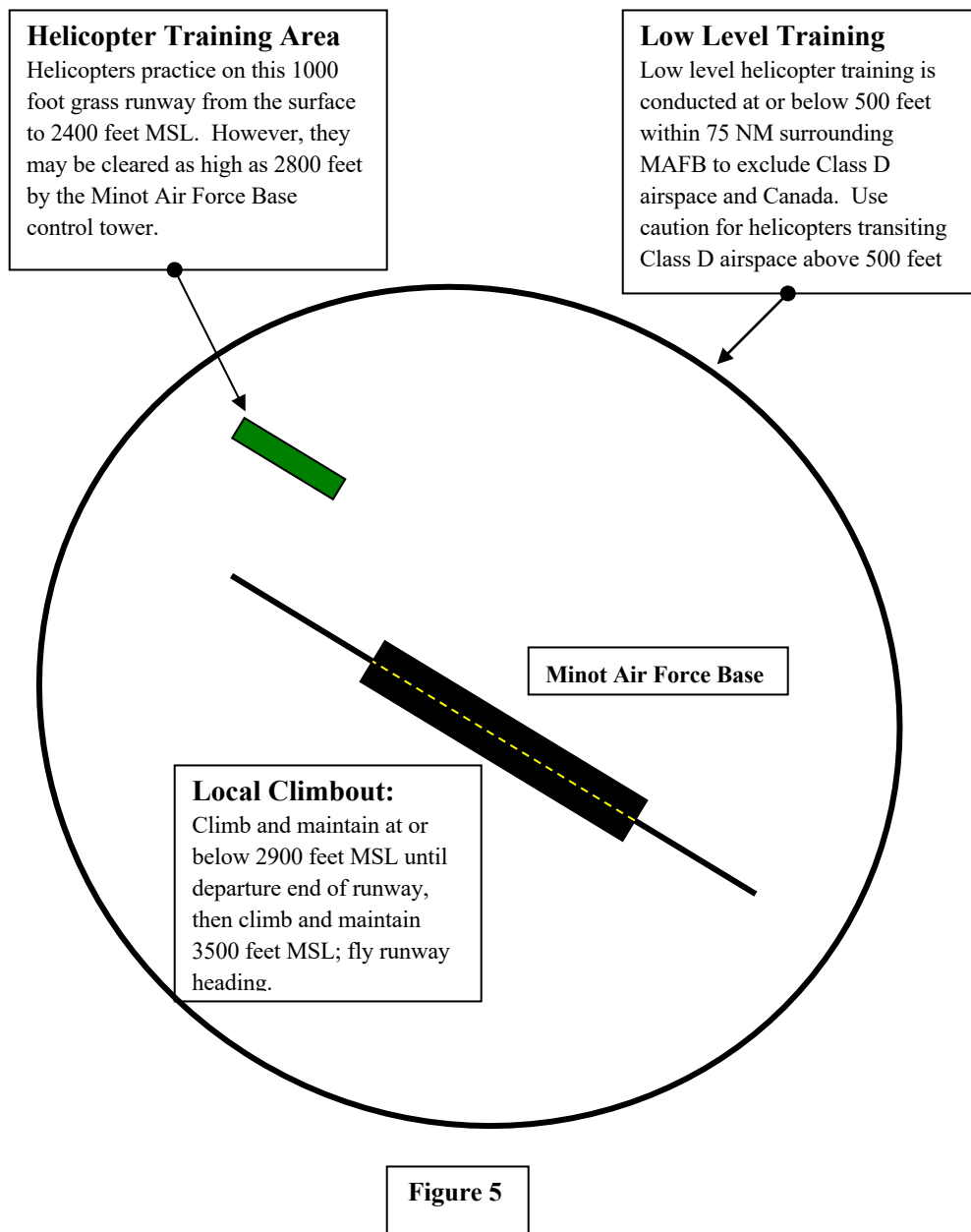
Approach plates, like the one found in Figure 2, are the actual references used by military pilots flying IFR approaches. Civilian airports and lakes have been added to the plates to show visual ground references. Try to correlate the flight path of the aircraft, shown by the heavy line, with the altitude shown in the block below. Understand that the ground references inside the circle are to scale and those outside the circle are approximate. An instrument qualified pilot can help you with the finer points of these approaches. Taking time to study these charts and specific altitudes may prevent a midair collision in the future.

If you have any questions, please contact the Flight Safety Office at Minot AFB, (701) 723-6233 or the Airspace Management Office, (701) 723-2967.

Military Training Routes and Military Operating Areas



Helicopter Approach and Departure



AIRCRAFT RECOGNITION AND TIME TO REACT

Military aircraft have been optimized for combat operations. One key to this is designing the aircraft so that they are difficult to see in the air. This is done through paint schemes, reduced front of side profiles, or aircraft shape. All of these things work against us in the see-and-avoid business, and makes military aircraft, yes, even the B-52, sometimes difficult to detect. This requires extra attention anytime that you are operating in the vicinity of military airfields, Military Operating Areas (MOAs), and IR/VR low level routes.

“Critical Seconds” (Figure 1) provides a graphic example of how little time you have to react when encountering an aircraft head on. Position this booklet six feet from yourself and follow the instructions. Although the B-52 is larger and easier to identify than the T-33 in the example, it’s gray camouflage makes it difficult to see at altitude and while low level.

Another problem military aircraft present to civilian flyers is jet wash and wake turbulence. The B-52 leaves a distinct smoke trail. **Avoid this trail at all cost!** Avoiding this will keep you well clear of the jet wash and wake turbulence associated with this heavy aircraft.

In addition to jet aircraft, we also have helicopters flying out of Minot AFB and the surrounding area. These aircraft also fly at VFR altitudes and present their own set of aerodynamic hazards for civilian aircraft. The main hazard associated with helicopters is it’s rotor wash. Avoid flying behind or below helicopters. Care should be taken considering helicopters fly at comparable speeds to single engine civilian aircraft.

When operating in the vicinity of a military airfield, MOA, or IR/VR low level route, please use flight following radar service, if available, to aid in a seeing and avoiding military aircraft. FAA-P-8740-51, “How to Avoid a Midair Collision,” is an excellent publication to help you develop good scanning techniques. FAA-P-8740-30, “Sharing the Skies,” can help clarify the types of airspace you may encounter with regards to military operations. These pamphlets are available from any FAA General Aviation District Office (GADO) or Flight Standards District Office (FSDO).

Illustrations and specifications of aircraft stationed in Minot AFB can be found on the following two pages. Additional military aircraft that frequent Minot AFB include the B-1B, F-16, F-15, EA-6B, KC-135, C-9, T-38, C-5, C-17, C-130’s, and Canadian jet trainers.



B-52H STRATOFORTRESS

A. Departure:

1. Climb out will be at 280 knots and 2,000 to 3,000 feet per minute
2. Should be above 10,000 feet MSL 35 nautical miles from Minot AFB

B. Approach:

1. Scheduled to be 250 KIAS or less below 10,000 feet MSL
2. Speed will be reduced to approximately 160 KIAS during the turn to final approach course

C. Potential Light Aircraft Problem Areas:

1. Total aircraft gross weight may reach 488,000 pounds. Therefore, both altitude and distance separation is imperative to avoid wing tip vortices and wake turbulence.
2. Aircraft may be flying in a three ship formation with each following aircraft one mile in trail with five hundred feet altitude separation.
3. The window area in the B-52s cockpit is relatively small and can limit outside visibility and the ability to see and avoid.

B-52 Standard Departures

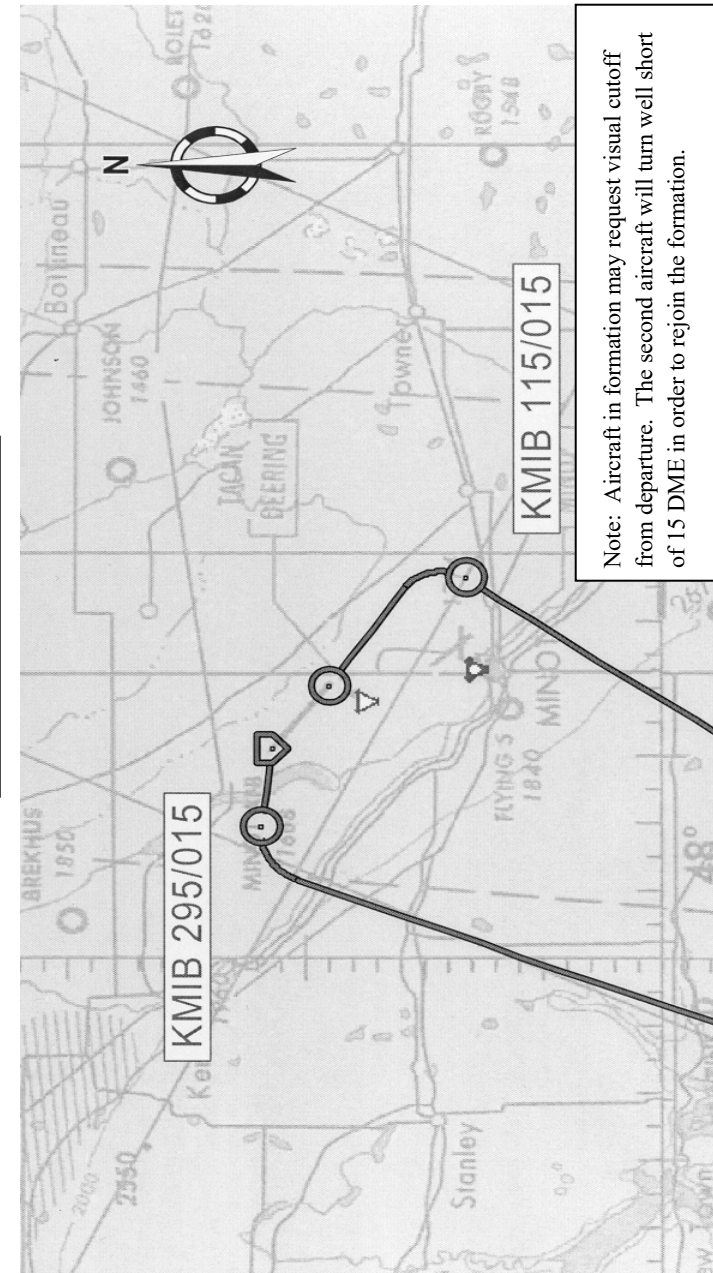
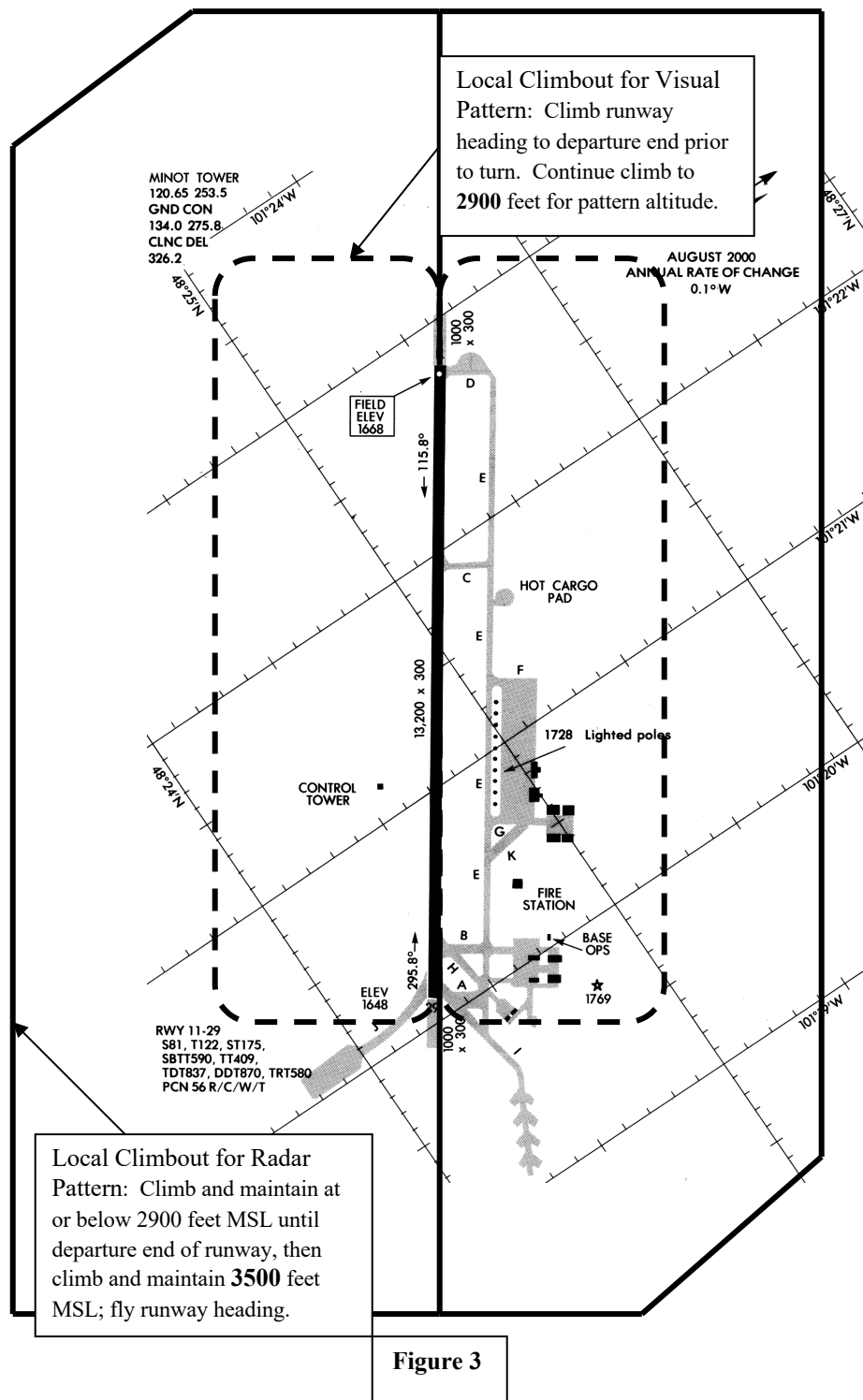


Figure 4



UH-1N Helicopter

A. Departure:

Airspeed will be 70 KIAS with a climb rate of 500 to 1500 feet per minute

B. Enroute:

Airspeed will be from 80 to 120 KIAS at a primary altitude of 100 to 500 feet AGL within 175 nautical miles of Minot AFB

C. Approach:

1. Visual approaches are normally performed to Minot AFB. Descent airspeed is 60 KIAS with a descent rate of 800 fpm.
2. Instrument approaches are flown to the runway at 80 to 90 KIAS with a descent rate no greater than 1000 fpm.

D. Potential Light Aircraft Problem Areas:

UH-1N helicopter operations are performed at altitudes similar to civilian light aircraft airspeeds and altitudes. Minot AFB helicopters frequently operate within 75 nautical miles of Minot AFB. When near small airports, helicopters will use VHF airport frequencies. Note: See Figure 4 for additional information.

DISTANCE - SPEED - TIME

M P H	600	360
SECONDS	60	100
10 miles	36	60
6 miles	30	50
5 miles	24	40
4 miles	18	30
3 miles	12	20
2 miles	6	10
1 mile	3	5
1/2 mile		

CRITICAL SECONDS

Move back 6 feet from this illustration. From that position the silhouettes represent a T-33 aircraft as it would appear to you from the distances indicated in the table on the left. The time required to cover these distances is given in seconds for combined speeds of 360 and 600 mph.

The blocks on the lower left mark the danger area, for the speeds quoted, when aircraft are on a collision course. This danger area is based on the recognition and reaction times shown in the table on the lower right.

Seconds	0.1	1.0	5.0	4.0	0.4	2.0	12.5
see object							
recognize a/c							
become aware of collision course							
decision to turn left or right							
muscular reaction							
aircraft lag time							
TOTAL							

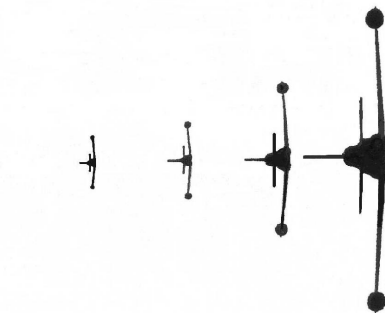


Figure 1

Reprinted from FAA VFR Pilot Exam-O-gram No. 29

MINOT, NORTH DAKOTA

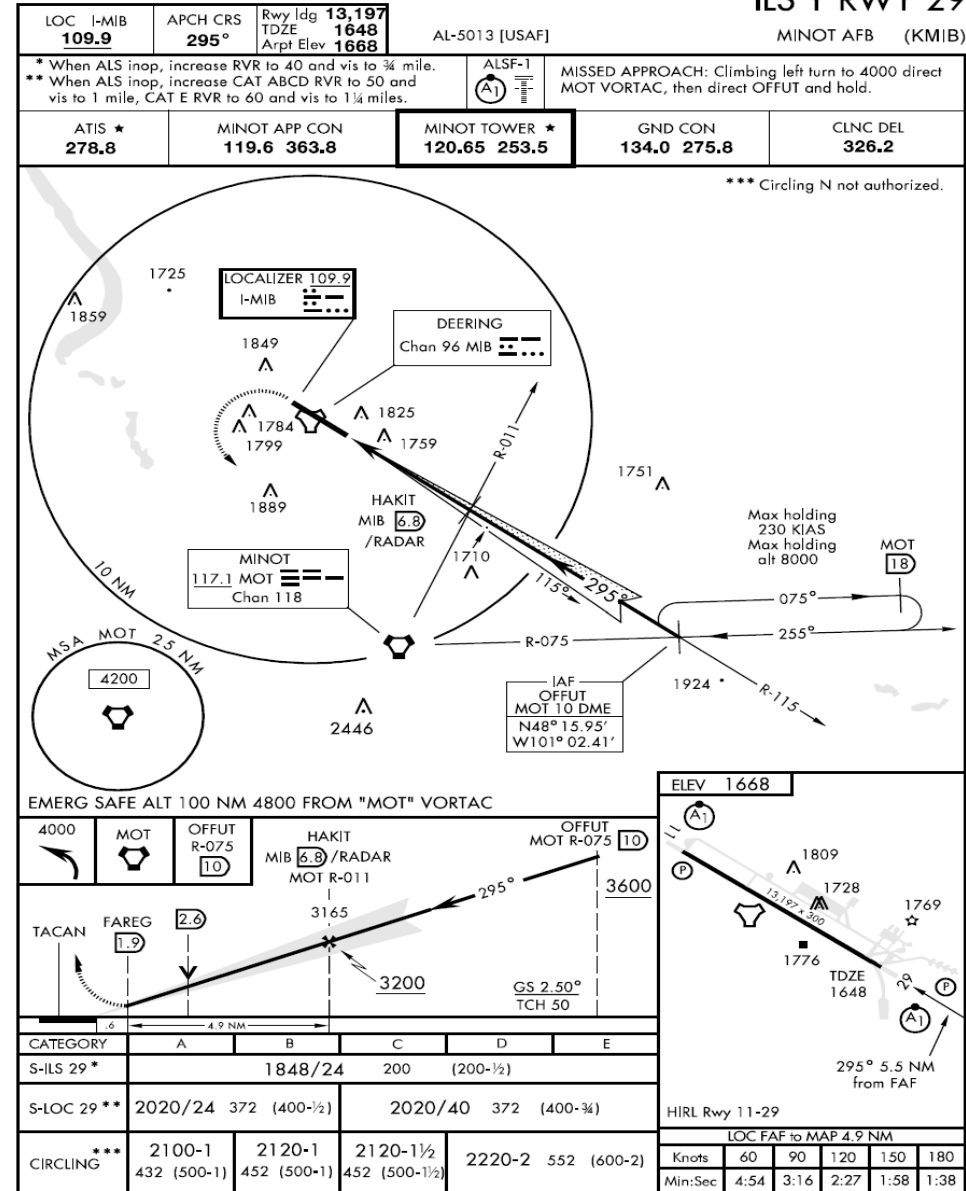


Figure 2