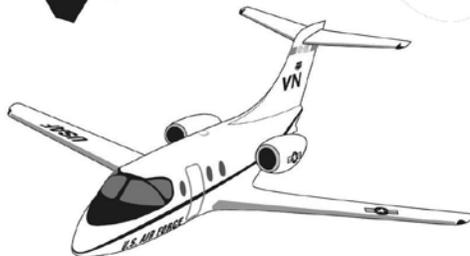
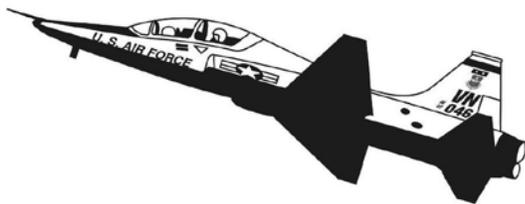


# VANCE AIR FORCE BASE MIDAIR COLLISION AVOIDANCE (MACA)



LET'S NOT MEET BY  
ACCIDENT!





Fellow Aviators,

Midair collisions are an area of vital concern to everyone who flies an airplane. Historically, the number of midair collisions between Air Force aircraft and general aviation aircraft is relatively low; however, 80 percent of reported Air Force near misses occur with general aviation aircraft. Because of increasing general aviation traffic and an intense student flying regiment, we want to inform you about the hazards associated with flying around Vance Air Force Base.

This booklet will alert you to the many areas of high midair collision potential in the skies above northwestern Oklahoma and southern Kansas and discuss ways we can make the skies safer for all aviators. It also describes available radar services, the types of military aircraft you may encounter in the local area, arrival and departure routes, military operating areas, and military training routes. Finally, it also provides information regarding the difficulties associated with seeing and avoiding other aircraft and methods to improve your scan.

The pilots and controllers assigned to Vance are firmly committed to maintaining a valid and active midair collision avoidance program. We hope this booklet will increase your understanding of Vance's flying activities so that we may continue to safely share the skies. If you desire any additional information or a briefing at your membership meetings, airport/FBO, or business concerning Vance Air Force Base operations, please contact the Vance Wing Safety Office at (580) 213-7233. If you have specific questions about our airspace, contact the Vance Airspace Office at (580) 213-7850. You can also visit our website at <http://www.vance.af.mil/sharetheair/index.asp>.

This publication is free of charge. Additional copies may be obtained from the 71st Flying Training Wing Safety Office by contacting us at (580) 213-7233. If the information contained within this booklet can help in preventing just one midair collision, it will have more than paid for itself.

Sincerely,

Vance AFB Midair Collision Avoidance Team  
71st Flying Training Wing  
Vance Air Force Base, OK

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## **THE THREAT:**

### **STUDENT TRAINING IN PROGRESS!**

Vance AFB trains over 475 pilots a year in 3 different high performance aircraft. This equates to almost 500,000 aircraft movements around Vance each year and amounts to almost 95,000 flying hours per year. This is a similar traffic count to both Will Rogers World and Tulsa International. In addition to USAF pilots, Vance is the only Air Force pilot training base that trains Navy and Marine Corps pilots as well. Most student pilots who go through the year-long training program have very little previous flying experience. Vance also trains many Radar Approach Control (RAPCON) and Tower controllers on a continual basis.

The airfield and traffic patterns are normally open from sunrise to sunset on Monday through Friday, occasionally during weeknights, and on Sunday afternoons at a reduced level. The Military Operations Area (MOA) airspace is normally active from sunrise to sunset on Monday through Friday, and occasionally on weeknights and weekends at a reduced level. We rarely fly on Saturdays, Federal Holidays, and the week between Christmas and New Year's Day. Operating hours are published in the NOTAMs under KEND from any Flight Service Station or at <https://www.notams.faa.gov/>.

For your safety, as well as ours, we would like to point out our areas of operations. PLEASE USE EXTREME VIGILANCE IN THESE AREAS. For traffic separation, please contact Vance RAPCON on the frequencies listed later in this booklet.

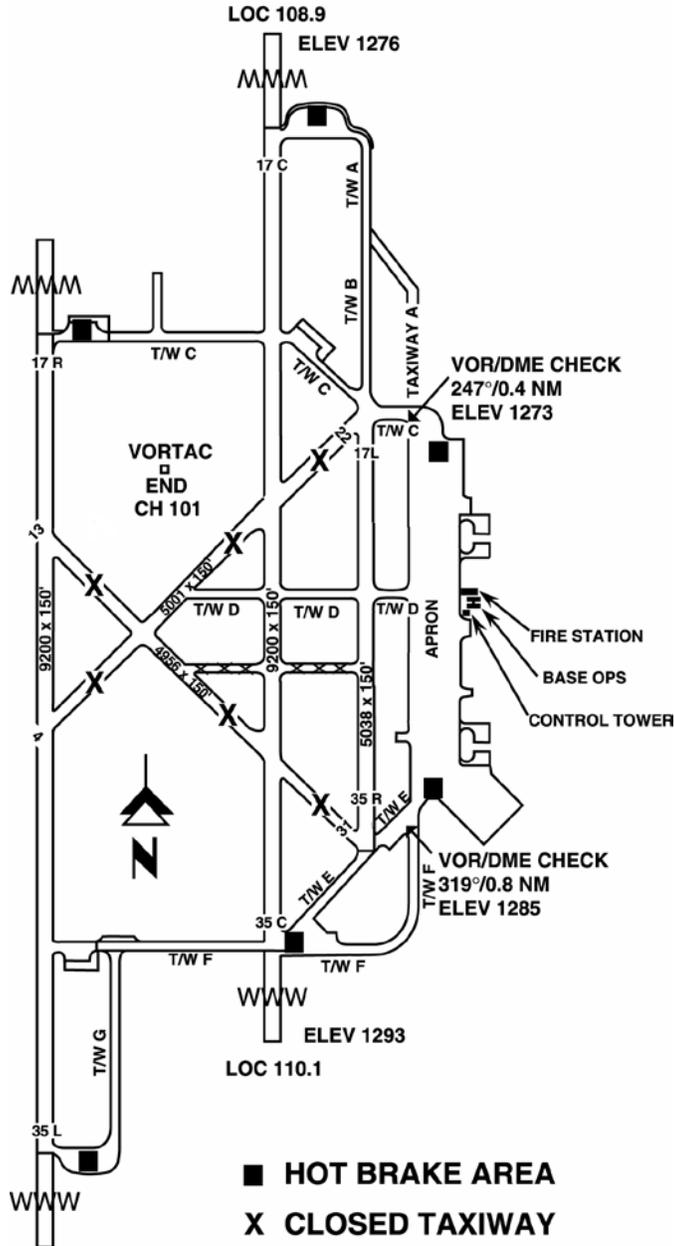
## ALERT AREAS

Both Vance AFB and Kegelman Auxiliary Field are depicted on en route charts as Alert Areas. Alert Areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of flying operations or an unusual type of aerial activity. Pilots should be particularly alert when flying into these areas. All activity within an Alert Area shall be conducted in accordance with the FARs, without waiver, and pilots of participating aircraft as well as pilots transitioning the area shall be equally responsible for collision avoidance.



## VANCE AIRFIELD LOCATION AND OPERATION

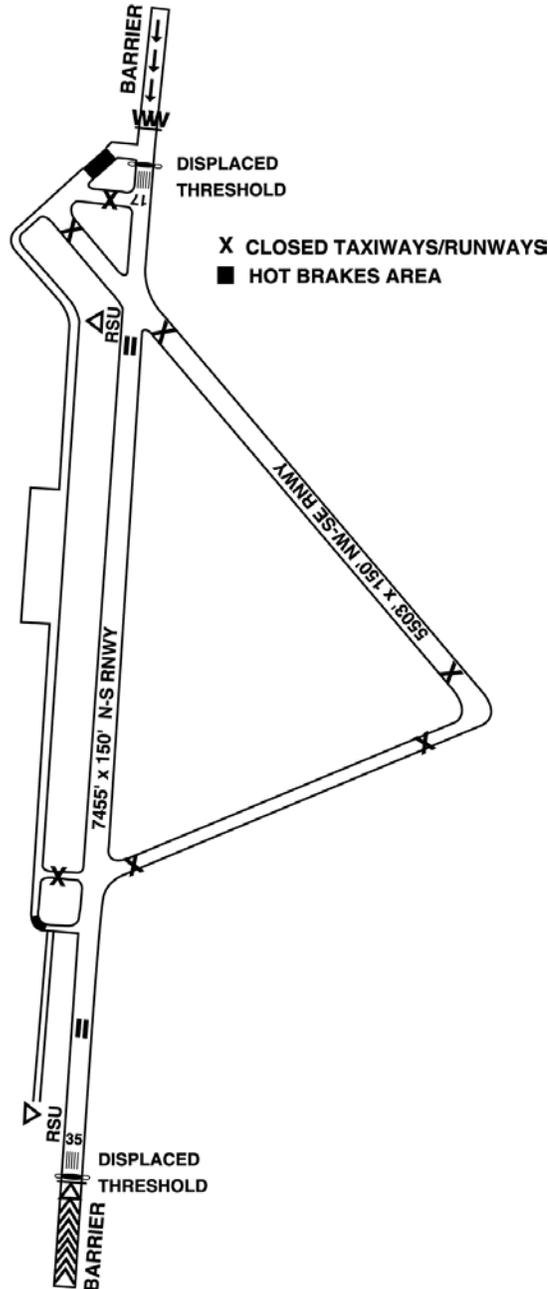
Location: 5 miles southwest of Enid, OK  
 Elevation: 1307 ft  
 Identifier: END  
 Vance Tower: 124.05



Vance AFB has very high-density T-6, T-38, and T-1 pattern operations from the surface to 4500' MSL and departures and practice approaches up to 15,000' MSL. The Alert Area extends from the surface up to 10,000' MSL. Departure/Recovery/Pattern speeds range from 110 to 230 KIAS for the T-6, 160 to 300 KIAS for the T-38, and 100 to 250 KIAS for the T-1. **Transition Vance AFB outside of 10 miles, or above 6500' MSL.** The airfield and traffic patterns are normally open from sunrise to sunset on Monday through Friday, and occasionally on weeknights and Sunday afternoons. Vance AFB is closed to all civilian traffic. Transient aircraft should plan to use Woodring Municipal located 3 miles east of Enid.

## KEGELMAN ("DOGFACE") AIRFIELD LOCATION AND OPERATION

Location: 23 miles northwest of Enid, OK  
Elevation: 1202 ft  
Identifier: CKA  
Vance Approach North: 118.075



Located near the Salt Plains Reservoir close to Jet, Oklahoma, Kegelman Auxiliary Field has high-density T-6 pattern operations from the surface to 3300' MSL and departures to 5500' MSL. The Alert Area extends from the surface to 10,000' MSL and the controllers only have UHF radios. Kegelman is closed to all civilian traffic. **Transition Kegelman outside 10 miles or above 6500' MSL.** For separation, contact Vance Approach Control (North) on 118.075. The airfield and traffic pattern are normally open from sunrise to sunset on Monday through Friday.

## RAYTHEON-BEECH T-6A TEXAN II



<u>AIRFRAME</u>		<u>OPERATIONAL</u>		<u>POWER PLANT</u>	
Built By	Raytheon	Range	900 miles	Engine	Turboprop
Wing Span	33'6"	Crew	2	Model	PT6A-68
Length	33'5"	Max Speed	320 KIAS	MFR	Pratt& Whitney
Max Weight	6,500 lbs	Patterns	110-230 KIAS	Rating	1,100 HP

The T-6 is the Air Force's newest primary trainer. The Texan II boasts an all glass cockpit, GPS navigation, Traffic Advisory System, and jet-like performance at low fuel cost. The T-6 is equipped with both VHF and UHF radios, and is painted with the upper half white and the lower half blue.

The T-6 performs simulated engine-out landings at Cherokee, Medford, Blackwell/Tonkawa, Perry, Guthrie, Watonga airports, and other nearby airfields. Approximately 10 miles from the airfield, the pilot will announce his intentions on UNICOM/CTAF. The pilot starts the maneuver 3000 feet above airfield elevation, aggressively spirals down to 100 feet over the runway, and then terminates the procedure. If you fly into these airfields, be aware of military aircraft in the vicinity and monitor the appropriate frequencies (see pages 13-14 for more detailed information).

## NORTHROP T-38C TALON



### AIRFRAME

Built By Northrop  
Wing Span 25'3"  
Length 46'4"  
Max Weight 12,500 lbs

### OPERATIONAL

Range 700 miles  
Crew 2  
Max Speed 710 KIAS  
Patterns 160-300 KIAS

### POWERPLANT

Engine 2 Afterburning Turbojets  
Model J85-GE-5R  
MFR GE  
Rating Mil 2400 lbs / Max 3500 lbs

The T-38 is the primary trainer for those future pilots entering the fighter or bomber world. During these 6 months, students continue developing their piloting skills and will master aerobatics and formation flying. The students will log about 120 hours of flying time with at least 16 of them being solo in the T-38 before receiving their wings. The T-38 is also used for Introduction to Fighter Fundamentals Training (IFF), which is a 3-month transition course for students going to fly fighter aircraft. The majority of training is conducted in Vance's western MOA. Like the T-6, you will find the T-38s training at various military and civilian fields throughout the United States.

Recently, the T-38 underwent a major avionics upgrade that added technological advances including a glass cockpit, GPS capability, and TCAS. The T-38 now has UHF and VHF radios, although most crews fly primarily listening to only UHF. It is two-tone gray in color with an extremely small frontal area which, combined with its high speed, makes it especially difficult to see when flying.

## BEECHCRAFT T-1A JAYHAWK



### AIRFRAME

Built By        Beechcraft  
 Wing Span     43'6"  
 Length         48'5"  
 Max Weight    16,300 lbs

### OPERATIONAL

Range            2100 miles  
 Crew            3  
 Max Speed     330 KIAS  
 Patterns        100-250 KIAS

### POWER PLANT

Engine        2 Turbopans  
 Model        JT15D-5B  
 MFR         Pratt and Whitney  
 Rating        2,900 lbs

The T-1 is the primary trainer for those future pilots entering the tanker or transport world. In this airframe, students continue to improve their airmanship while also learning the basics of air refueling and low level airdrop formation. They will spend about 6 months flying the T-1 and log about 160 hours of flying time with approximately 55 of those hours in the jumpseat. Although some training is done in the western MOA, most of it is done off-station at civilian and military airfields generally within 200 miles of Vance. The T-1 is GPS and TCAS equipped. TCAS provides the T-1 with traffic advisories for other aircraft squawking a Mode 3/A IFF code and resolution advisories (actual collision avoidance instructions) for other aircraft squawking a Mode C IFF code. The T-1 has both a UHF and a VHF radio and is white or gray in color.

## **AIR TRAFFIC CONTROL SERVICES**

Here at Vance AFB, we are fortunate to have extremely dedicated and professional air traffic controllers. Vance Approach Control provides services to Vance AFB and to the Enid-Woodring, Fairview, Medford, and Watonga Municipal Airports, and can provide service to both IFR and VFR pilots operating within or around the Vance airspace. If you are IFR rated, you are strongly encouraged to fly IFR and take full advantage of the services provided. VFR pilots are encouraged to contact Vance Approach Control for traffic advisories. Generally, the approach control frequencies listed below are the first ones that you will contact when arriving in Vance airspace. As you get closer, you will be handed off to different arrival frequencies. If you contact an incorrect frequency by mistake, the controllers will instruct you to change to the correct one. Remember that Vance aircraft will be using UHF radios and cannot hear civilian traffic on VHF radio.

### **VANCE LOCAL FREQUENCIES**

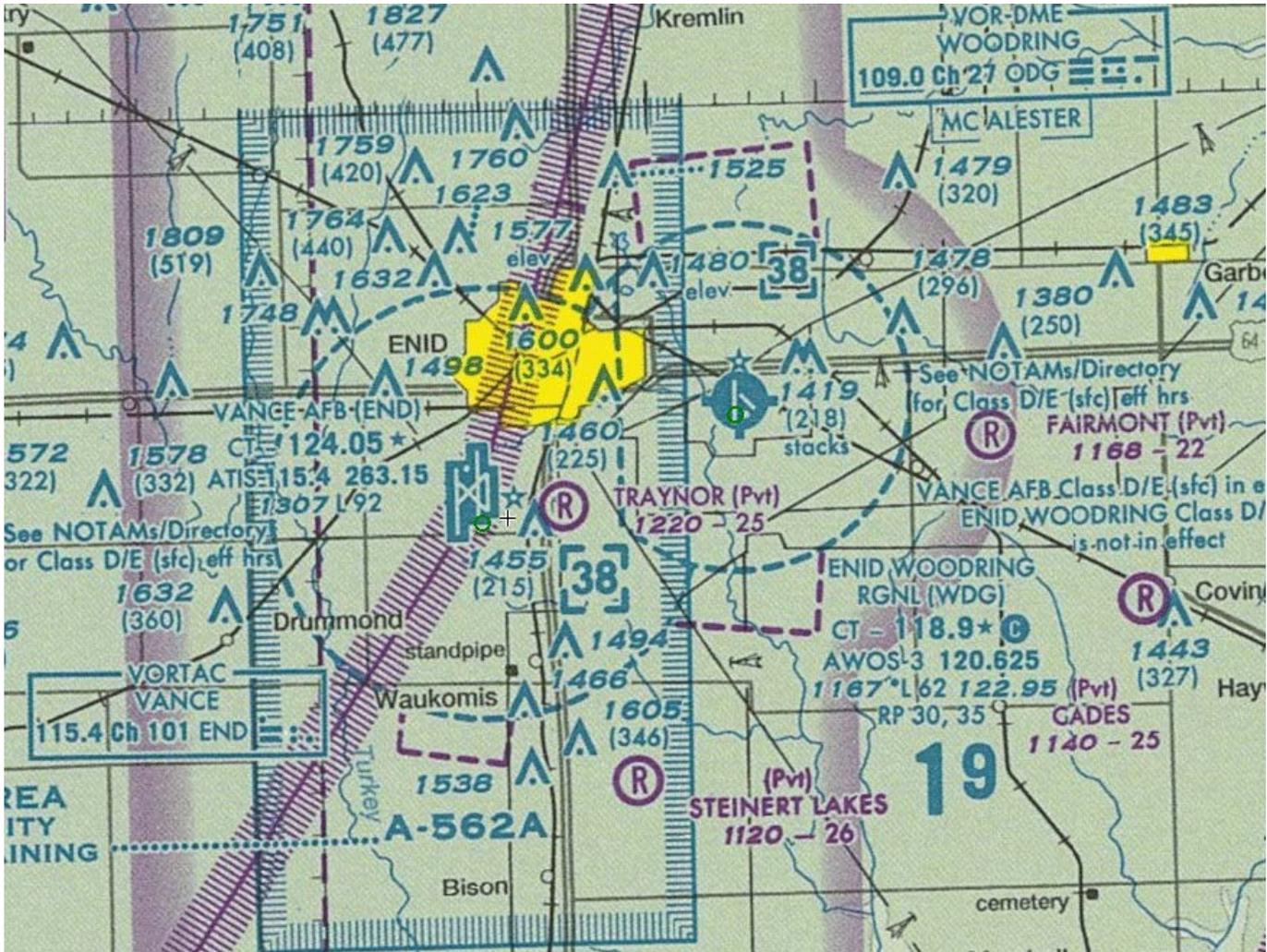
120.525	VANCE APPROACH CONTROL
125.45	VANCE APPROACH CONTROL (EAST)
126.75	VANCE APPROACH CONTROL (WEST)
118.075	VANCE APPROACH CONTROL (NORTH)
121.3	VANCE ARRIVAL (EAST)
119.775	VANCE ARRIVAL (WEST)
124.05	VANCE TOWER
118.9	WOODRING TOWER

### **AERIAL AGRICULTURAL SPRAYER PIPELINE / POWERLINE INSPECTIONS**

We understand the importance of agricultural activities and of the requirement to inspect pipelines and power lines that run under the Vance Class D airspace. Therefore the following information is provided:

- (1) Vance Approach Control can provide service to allow such operations in a safe manner.
- (2) Contact Vance tower prior to entering the Vance Class D airspace to allow time to coordinate military traffic pattern activities.
- (3) If possible, remain below 200' AGL in Vance's Class D airspace and do not fly within 1 NM of any runway.
- (4) The safest time for such operations is when student training is not in progress. For information regarding the status of Vance operations, contact Vance Base Operations at (580) 213-7425 or check with your local Flight Service Station for current NOTAMS.

## WOODRING AIRPORT VFR ARRIVALS AND DEPARTURES



For operations to and from Woodring Airport, a VFR arrival and departure routing (formerly recognized as the Lahoma Corridor) is used to assist air traffic control in routing civilian aircraft through Vance's Class D airspace. All VFR traffic must contact Vance tower prior to entering Class D airspace when within 4 miles of Vance Air Force Base. Civilian traffic that does not wish to communicate with tower is highly recommended to remain outside of 10 miles from Vance due to extremely heavy pattern operations within a 10 nautical mile radius.

The VFR arrival and departure ground track is 1/2 mile either side of Highway 412 from the northern boundary of Vance Class D to 3 miles west of Woodring Airport, between 3000' and 4000' MSL. VFR traffic is recommended to fly at 3500' MSL. If westbound, stay within 1/2 mile north of Highway 412; if eastbound, stay within 1/2 mile south of 412.

To ensure aircraft separation when arriving at Woodring Airport from the west, contact Vance Arrival (West) on 119.775. Do not descend below 3000' MSL (recommended 3500' MSL) until clear of Vance Class D airspace and within 3 miles of Woodring. If departing westbound from Woodring, you must contact Vance Tower on 124.05 prior to entering Class D airspace. If not transitioning Vance Class D, radar advisories are available on 126.75. During normal Vance pattern operations, T-6, T-38, and T-1 aircraft will fly between 2500' and 2900' MSL just under the civilian arrival and departure routing for Woodring.

## T-6 EMERGENCY LANDING PATTERN (ELP)

T-6 pilots may practice simulated engine out landings at towered and non-towered fields. Stringent procedures are in place when performing these ELP's, and a qualified instructor pilot must be onboard to accomplish this maneuver. The pilot will announce on CTAF/UNICOM when 10 miles out. If there are two aircraft already established in the pattern, the T-6 approaching the airfield must discontinue his approach. If clear to continue, the T-6 will fly to an altitude 3000 feet above airfield elevation and announce high key. He will continue with an aggressive spiraling pattern almost directly over the airfield until 100 feet above the runway. The pilot will terminate the maneuver and initiate a climb approximately 100 feet above the ground at a non-towered or continue with the landing at a towered field.

#1

**Radio Call:** "Texan 01, military T-6  
10 miles east of the field, X, XXXX ft (MSL)  
for multiple overhead / ELP patterns, any  
other traffic please advise"

#2

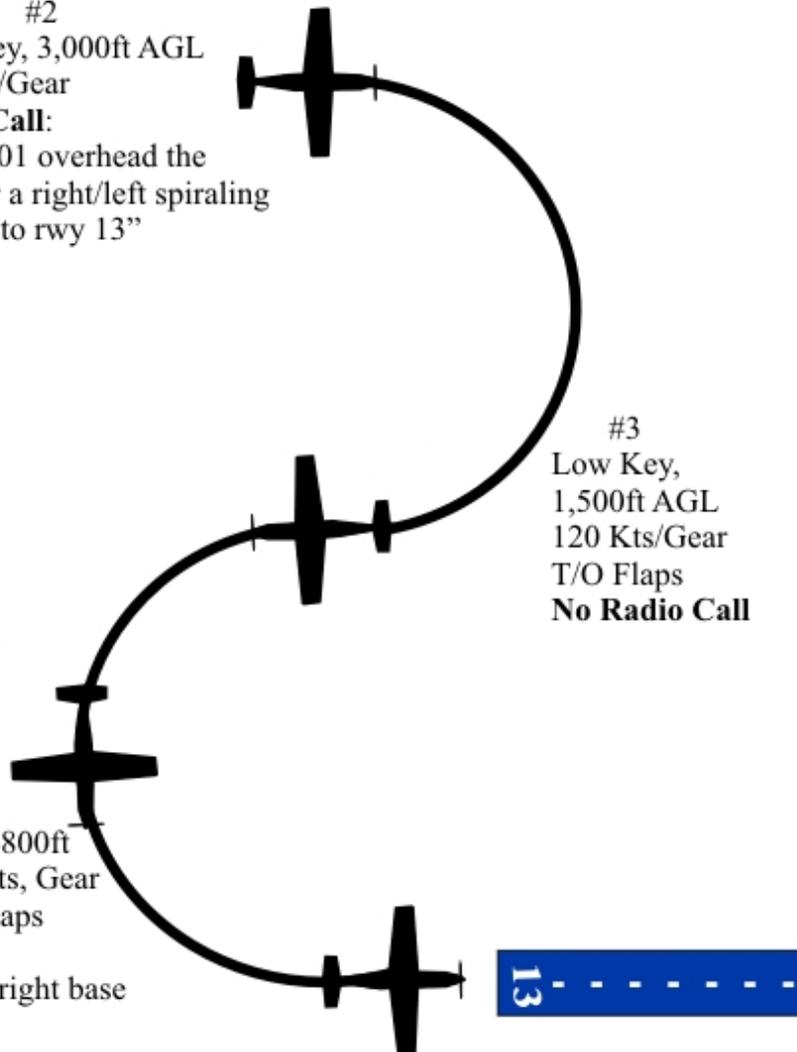
High Key, 3,000ft AGL  
120 Kts/Gear  
**Radio Call:**  
"Texan 01 overhead the  
field for a right/left spiraling  
descent to rwy 13"

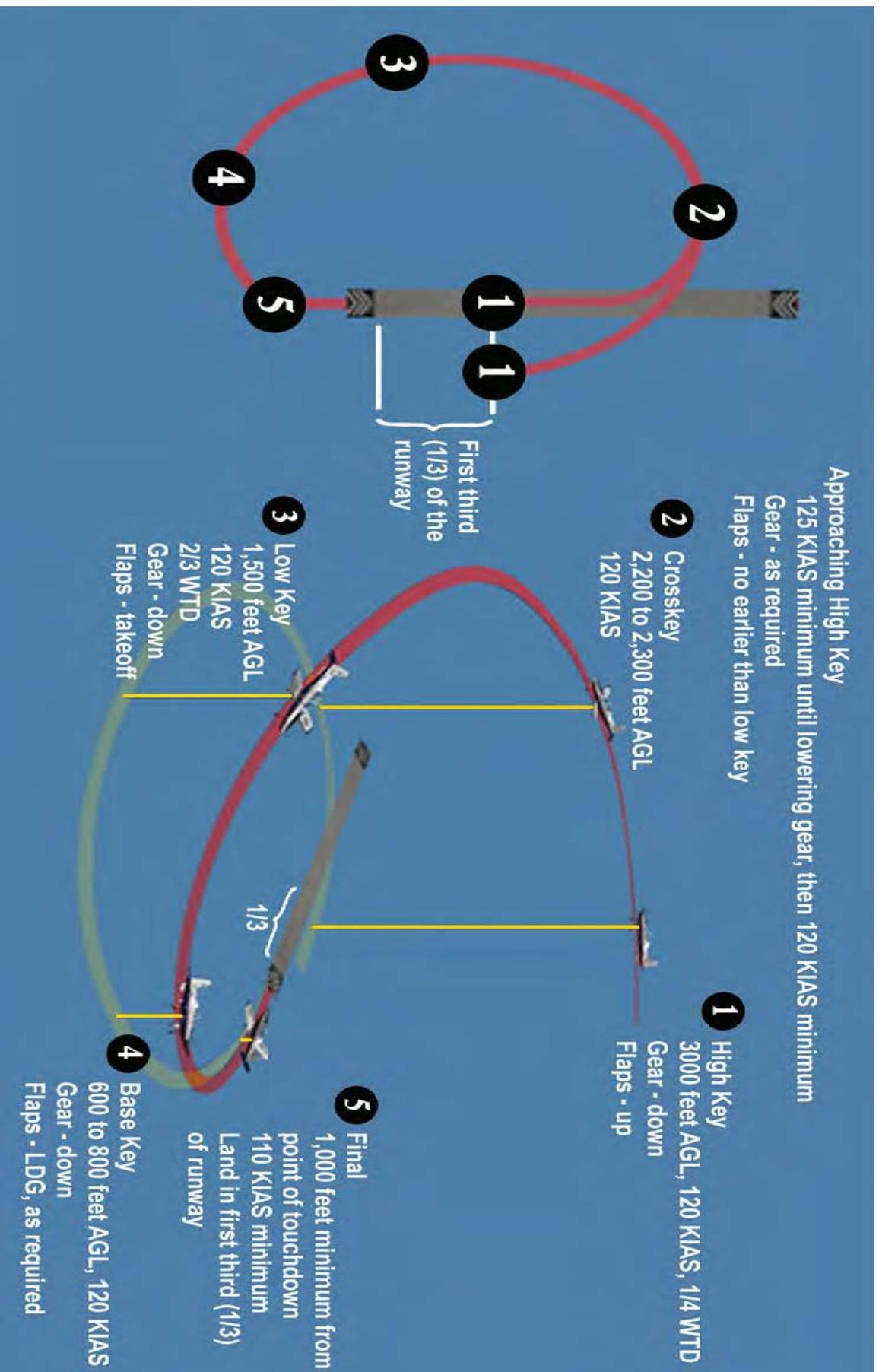
#3

Low Key,  
1,500ft AGL  
120 Kts/Gear  
T/O Flaps  
**No Radio Call**

#4

Base Key, 700-800ft  
AGL, 120 Knots, Gear  
and Landing Flaps  
**Radio Call:**  
"Texan 01 left/right base  
gear down"

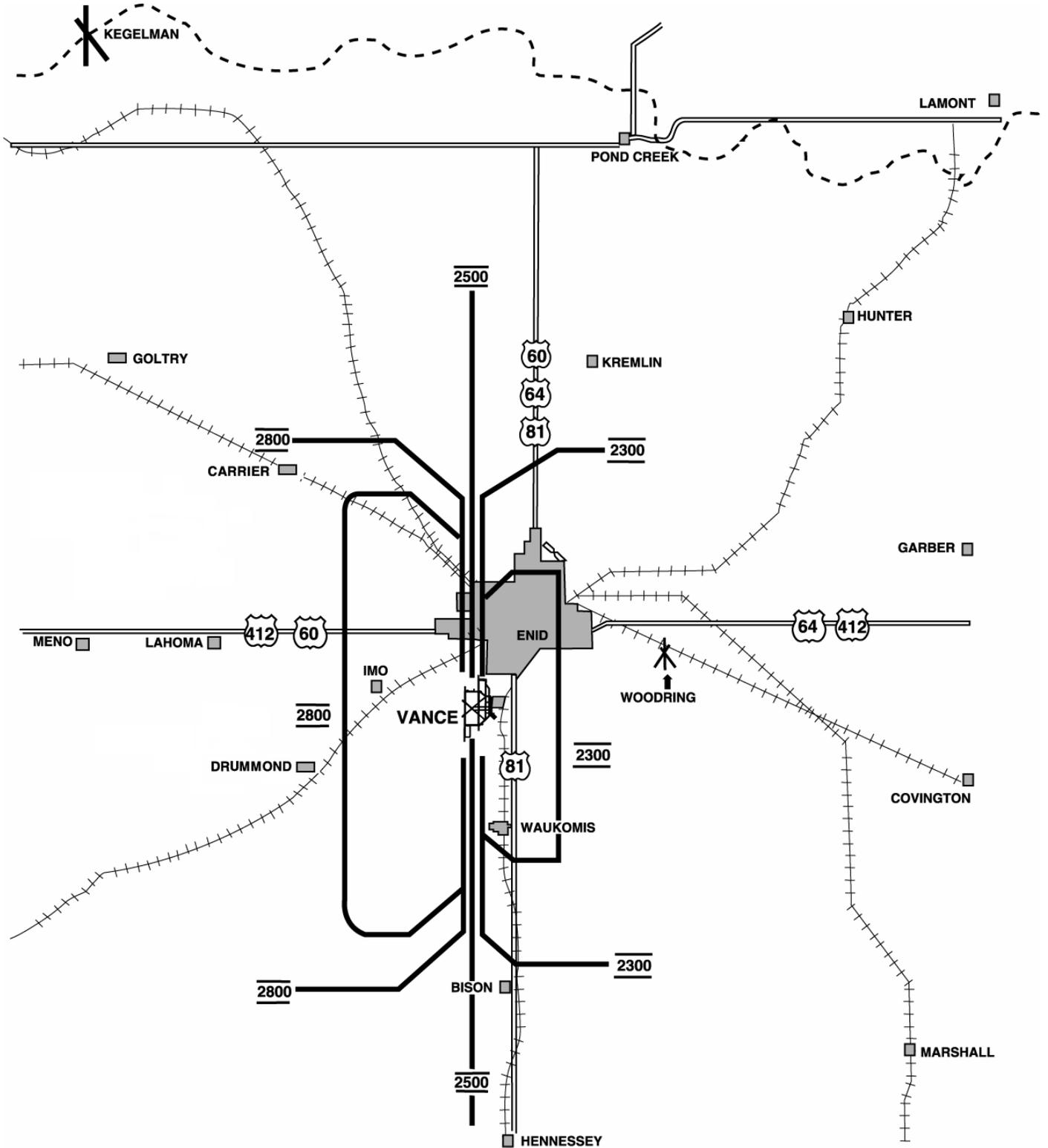




Typical T-6 Emergency Landing Pattern

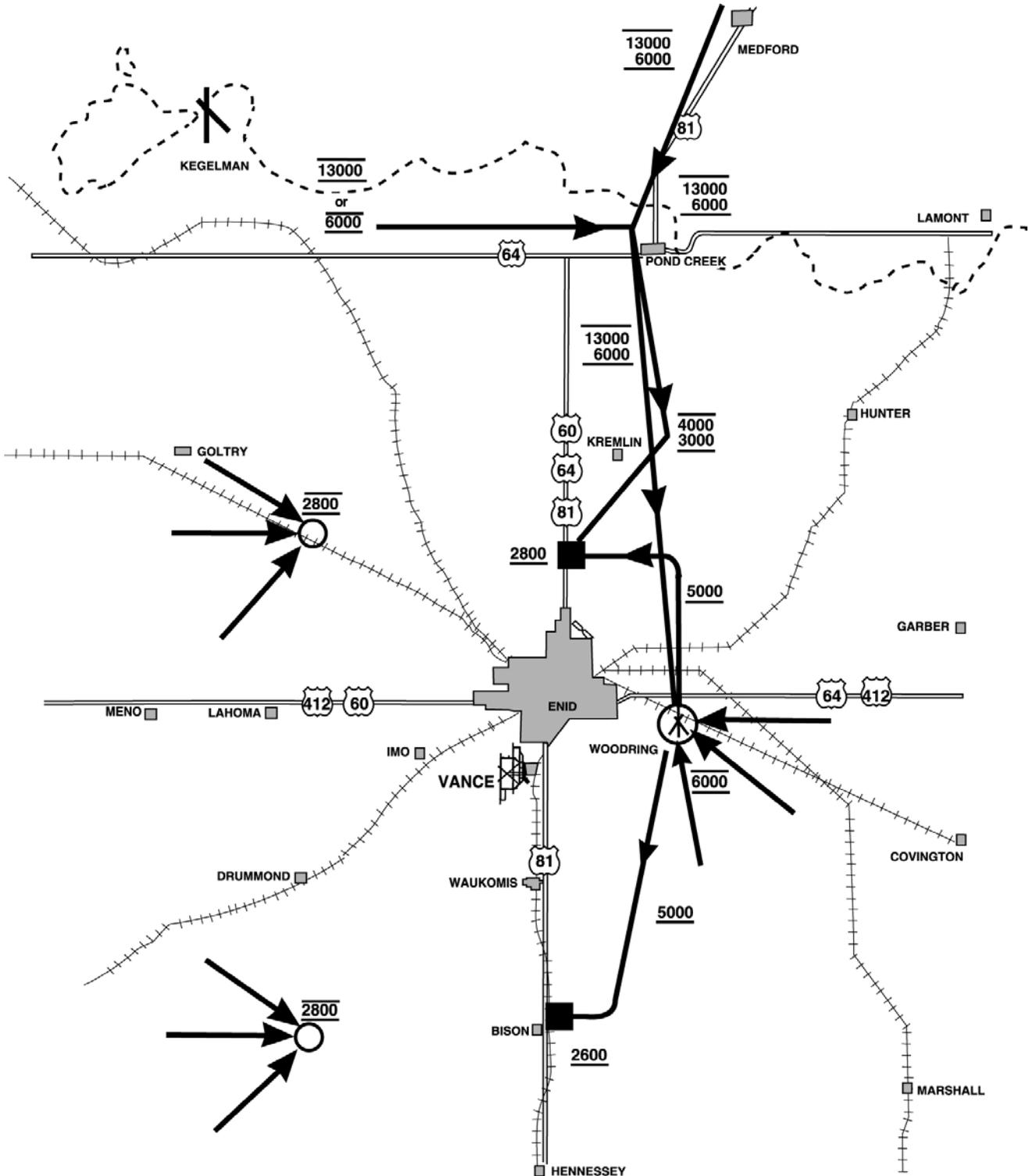
# T-6/T-38/T-1 VFR PATTERN OPERATIONS

Recommend avoid Vance AFB by 10 miles in all directions  
T-T-6 pattern is on the east side and flown at 200 knots  
T-38/T-1 pattern is on the west side and flown at 300/250 knots



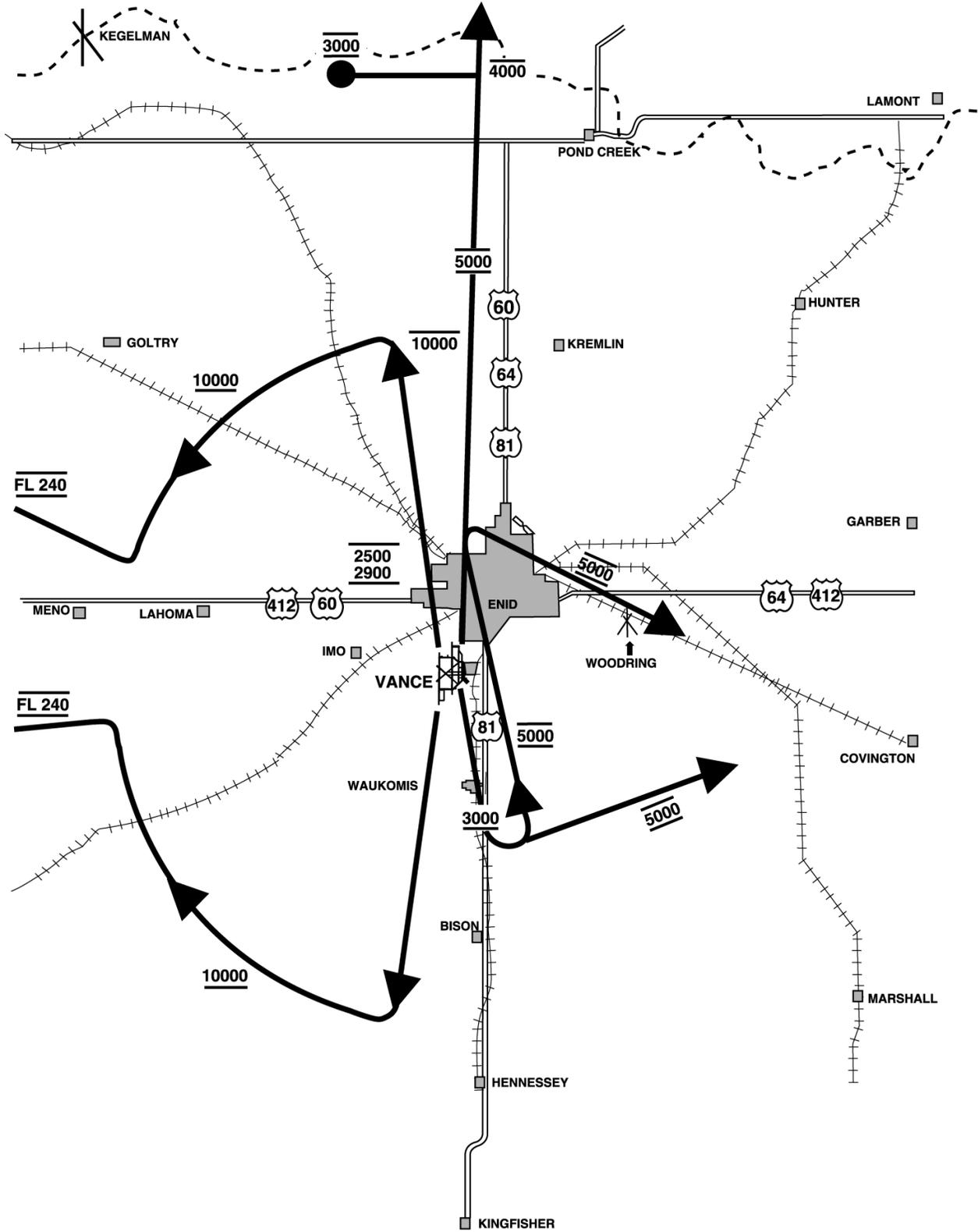
# T-6 / T-38 / T-1 ARRIVALS FROM THE MOA'S AND KEGELMAN

T-6 arrive from the north, east, and south at 230 knots  
 T-38/T-1 arrive from the west and southwest at 300/250 knots



# T-6 / T-38 / T-1 DEPARTURES TO THE MOA's AND KEGELMAN

T-37/T-6 depart to the north and east at 230 knots  
T-38/T-1 depart to the west at 300/220 knots



## MILITARY OPERATING AREAS

MOAs are established for the purpose of separating certain military training activities from IFR traffic. Nonparticipating IFR traffic may be cleared through a MOA if IFR separation can be provided. Otherwise, ATC will reroute or restrict nonparticipating IFR traffic. Pilots operating under VFR are not restricted from entering a MOA; however, extreme caution should be used when flying through a MOA during published hours of operation. MOAs are depicted on IFR Low Altitude En Route Charts, VFR Sectional Charts, and VFR Terminal Charts. Information regarding activity in a specific MOA can be obtained from any Flight Service Station within 100 miles of the MOA or the controlling agency.

The Vance MOA contains the largest portion of our operations. The airspace to the north, east, and south of Vance (depicted on page 19) extends from 7,000' MSL to FL 220, and is used primarily by our T-6 aircraft. They perform stalls, spins, aerobatics (loops, rolls, etc.), instrument work, and formation flying from 70 to 275 KIAS in this area. Many students are solo and some have only 25 hours of total flying time. For separation, contact Vance Approach Control (East) on 125.45. The airspace to the west of Vance (depicted on pages 19) extends from 10,000' MSL to FL 230, and is used primarily by our T-38 and T-1 aircraft. T-38 aircraft operate in this area performing stalls, aerobatics, instrument work, Basic Fighter Maneuvers (BFM), and formation flying (anywhere from 3 feet up to 2 miles between aircraft) from 150 to 500 KIAS. Many students are solo. T-1 aircraft operate in this area performing stalls, instrument work, formation flying, and simulated air refueling from 90 to 330 KIAS. For separation, contact Vance Approach Control (West) on 119.775.

These MOAs are listed on the charts as having tops of 17,999' MSL. However, Vance has a working agreement with Kansas City Center (KCC) to extend the airspace up to FL 220 in the east and FL 240 in the west in an ATCAA (Air Traffic Control Assigned Area). The airspace between FL 230 and FL 240 in the west is used for vectoring aircraft to and from the western MOA. In addition, Vance also has a letter of agreement with KCC to use the altitudes from 9,000' to 10,000' MSL for vectoring aircraft to and from the western MOA.

Our MOA operations are usually conducted weekdays between sunrise and sunset. However, we do occasionally have night flying and/or weekend flying where the MOA is in use. Notification of night use can be obtained through the NOTAM system. When in doubt, expect the MOA airspace to be active.

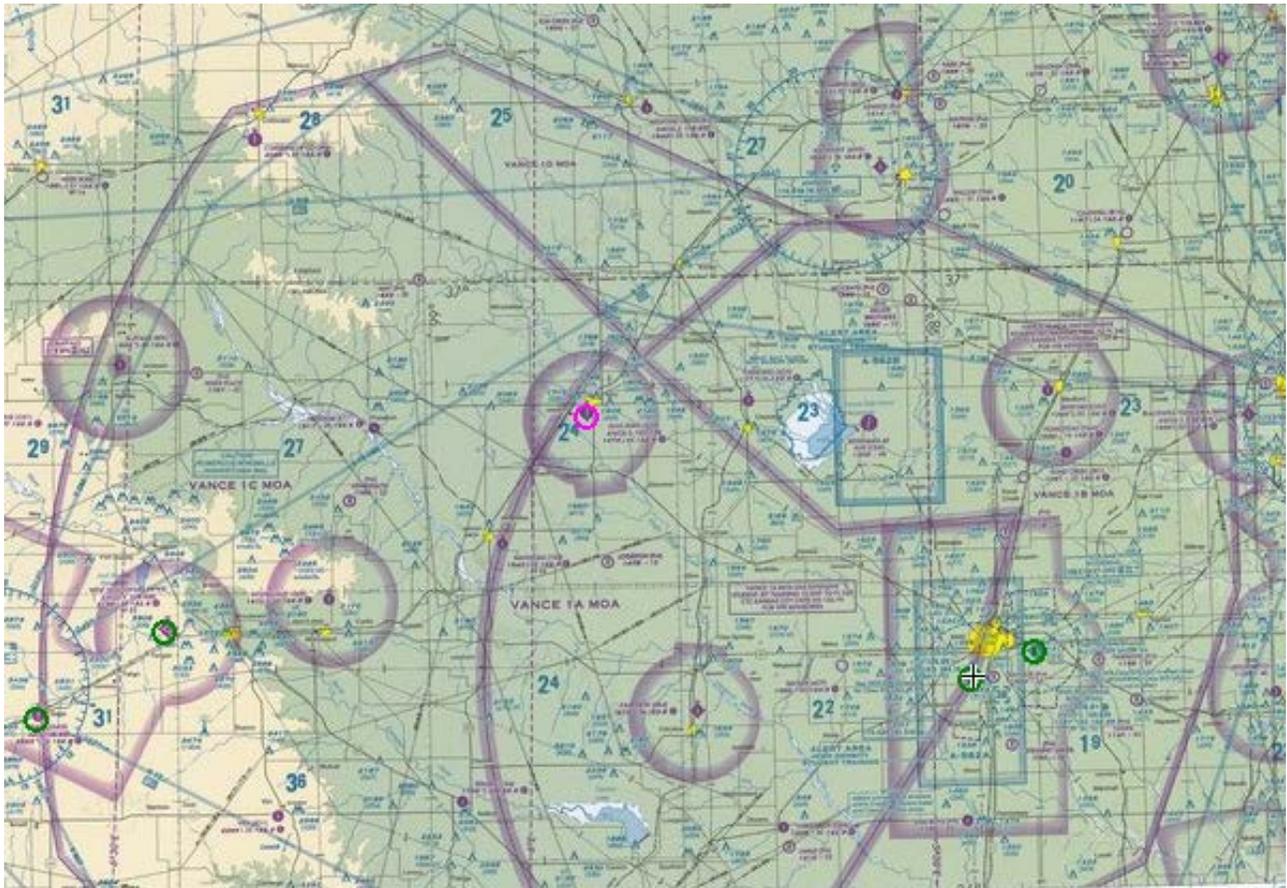
**If you fly IFR through the Vance MOA, one of two things will happen:**

- (1) First, you may be assigned an altitude above or below the MOA. In this case, conflicting military traffic in each of the 26 training areas inside the MOA (or 52 if you count high and low blocks) will be restricted within an appropriate altitude block to allow sufficient IFR separation. While we understand that this is not just our airspace, any altitude restriction will likely impact training.
- (2) Secondly, you may not be allowed to enter the MOA and will be vectored around it.

## MILITARY OPERATING AREAS (Continued)

If you fly VFR through the Vance MOA, one of two things will happen:

- (1) If you talk to Vance Approach Control for flight following, they will give traffic advisories on a time permitting basis. While our controllers do a great job of monitoring aircraft, sometimes traffic advisories for VFR aircraft cannot be given on a typically busy day at Vance due to controller workload. Vance has had several near midair collisions between military and VFR civilian aircraft in the past. In these cases, no one had done anything technically or procedurally wrong; however, civilian and military aircraft still flew dangerously close to each other. The potential for disaster is much higher while operating in a MOA. If you fly VFR through the Vance MOA, we request that you contact Vance Approach Control so that traffic advisories may be given for any potential conflict.
- (2) If you do not talk to Vance Approach Control, you run the highest chance for a midair collision. Just because it is legal does **not** make it smart or safe. If at all possible, avoid flying through the MOA by either going under it or around it. You are completely legal to fly VFR through the Vance MOA and never talk to anyone; however, this is not necessarily the smartest or safest route of flight.



## MILITARY TRAINING ROUTES

MILITARY TRAINING ROUTES (MTRs) are established to accommodate training operations that must be conducted below 10,000' MSL at speeds in excess of 250 knots. There are currently three types:

- (1) IFR MTRs (IRs) - Operations require a ceiling and visibility of 1,500 feet and 3 miles or greater.
- (2) VFR MTRs (VRs) - Operations require a ceiling and visibility of 3,000 feet and 5 miles or greater. Aircraft are flying VFR.
- (3) Slow Speed Low Altitude Training Routes (SRs) - Operations require at least VFR weather, a maximum speed of 250 knots, and a maximum altitude of 1500' AGL. Aircraft are flying VFR.

All IRs and VRs with a route segment above 1500' AGL will be depicted on IFR Low Altitude En Route Charts and VFR Sectional Charts. These routes will have a three number identifier (i.e. IR 171). All IRs and VRs with no route segment above 1500' AGL will have a four number identifier. SR routes will NOT be depicted on either the IFR or VFR charts. Information regarding any route can also be obtained from a Flight Service Station within 100 miles of the route and includes times of scheduled activity, altitudes in use on each route segment, and actual route width. When requesting information, pilots should give their position, route of flight, and destination.

Vance T-38s and T-1s currently use ten IR routes: IR 145, 146, 171/181, 172/182, 173/183, and 175/185. Vance T-6s and T-1s use one VR route: VR 119. In addition, two other VR routes (VR 138 and 152) cross in the vicinity of Vance airspace and are shown on the map on pages 12-13 for reference. Vance T-6s and T-1s use four SR routes: SR 235/253 and 241/247. Additionally, Vance owns three other infrequently used SR routes: SR 294, 295, and 296. All of these routes are normally active from 30 minutes after sunrise to 30 minutes prior to sunset, Monday through Friday and occasionally on weekends. VR 138 and 152 could be active as early as 0600 until 2200. This is a very demanding type of flying. Aircrews must devote considerable attention to precise navigation and avoiding contact with the ground, which can limit their ability to see other aircraft. Pilots, especially those flying VFR, should use extreme caution when flying in the vicinity of these routes. Please attempt to cross and/or avoid these routes using the information listed under each type of route. IFR traffic can expect standard separation from aircraft on IR routes.

## **MILITARY TRAINING ROUTES**

(Continued)

### **IRs**

IR routes are depicted by dark gray shading on page 12. These routes are flown between 500'-2500' AGL (2000'-4000' MSL). T-38s fly IRs at speeds up to 420 KIAS and T-1s fly IRs at speeds up to 300 KIAS. Many aircraft fly in 2-ship formations along these routes with formation spacing anywhere from 3 feet up to 2 miles between aircraft. The routes extend between 2 and 6 miles on either side of centerline. Plan to cross IRs at a 90-degree angle above 4500' MSL.

### **VRs**

VR routes are depicted by medium gray shading on pages 12-13. These routes are flown between 500'-3000' AGL (2000'-4500' MSL) and are flown by Vance assigned aircraft as well as other military aircraft (primarily Tulsa Air National Guard F-16's) at speeds up to 560 KIAS in 4-ship formation. The routes extend between 3 and 5 miles on either side of centerline. Plan to cross VRs at a 90-degree angle above 5500' MSL.

### **SRs**

SR routes are depicted by light gray shading on pages 12-13. These routes are flown between 500'-1500' AGL (2000'-3000' MSL). T-6s and T-1s fly SRs at speeds up to 250 KIAS, and many T-1s fly in a 2-ship airdrop formation. The routes extend between 2 and 4 miles on either side of centerline as shown on pages 12-13. Plan to cross SRs at a 90-degree angle above 3500' MSL. Remember, SRs are NOT depicted on IFR or VFR charts.

IF POSSIBLE, PLEASE PLAN ON CROSSING MTRs AT A MINIMUM OF 2000' AGL.

## PROFILE OF A MIDAIR

During a three-year study of midair collisions involving civilian aircraft, the National Traffic Safety Board (NTSB) determined that:

- (1) The occupants of most aircraft involved in a midair were on a pleasure flight with no flight plan filed.
- (2) Nearly all midair collisions occurred in VFR conditions during weekend daylight hours.
- (3) The majority of midairs were the result of a faster aircraft overtaking and hitting a slower aircraft.
- (4) No pilot is immune. Experience levels in the study ranged from the initial solo to the 15,000 hour veteran.
- (5) The vast majority of midairs occurred at uncontrolled airports below 3,000' AGL.
- (6) En route midairs occurred below 8,000' AGL and within 25 miles of an airport.
- (7) Flight instructors were onboard one of the aircraft in 37% of the midairs.

### *MIDAIR COLLISION AVOIDANCE AND YOU*

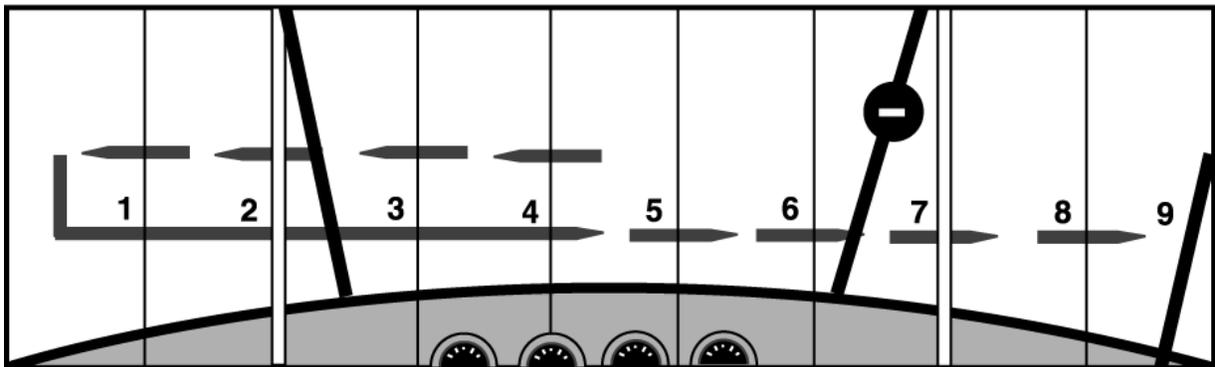
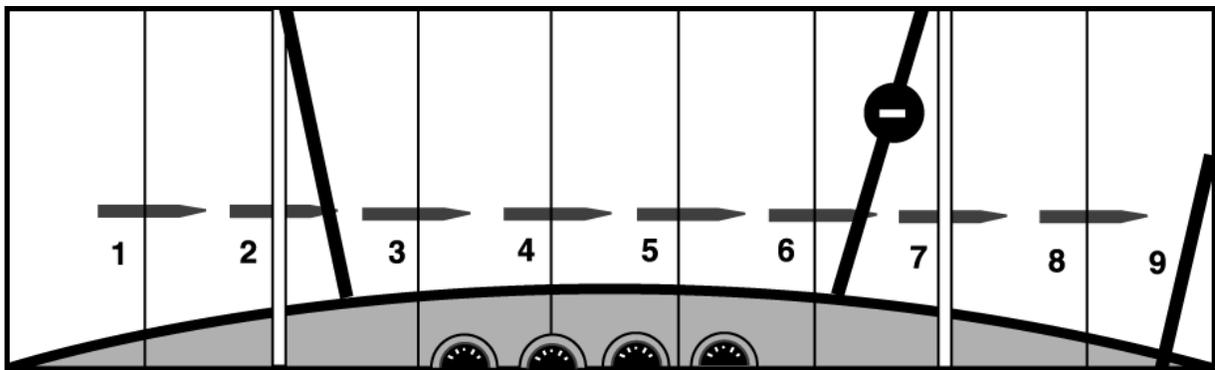
The FAA has instituted several policies to alleviate the midair collision potential, but the ultimate responsibility lies with you, the pilot. Here are seven simple rules of engagement you can follow to make flying safer, and hopefully reduce your chance of being the victim of a midair collision.

- (1) **PLAN AHEAD** - thoroughly review your intended route of flight before walking out to your airplane. Plan to avoid alert areas, restricted areas, MTRs and MOAs if possible. Check NOTAMs and identify possible conflict areas.
- (2) **SEE AND AVOID** - Scan the airspace ahead of you and to the side using proper scanning techniques. Periodically check behind you since the majority of midair's occur with one aircraft overtaking another:
- (3) **CLEAR** - Before executing a climb, turn, descent or any other maneuver, ensure the area is clear using appropriate clearing procedures.
- (4) **COMMUNICATE** - When flying into or out of uncontrolled airports, broadcast positions and intentions. Make frequent position reports along your route. If radio contact with Center, Approach or Tower is not required, monitor an appropriate facility frequency. Finally, request and use available radar services. Remember, you are ultimately responsible for seeing and avoiding other traffic and should not relax your visual scanning vigilance.
- (5) **SQUAWK** - If your aircraft is transponder equipped turn it on and adjust it to reply on both Mode 3/A and Mode C. You are reminded that Mode 3/A and Mode C operations are required: (1) at or above 10,000' MSL over the 48 contiguous states, excluding the airspace below 2,500' AGL; (2) within 30 miles of Class B Airspace primary airport below 10,000' MSL; (3) within and above all Class C Airspace.
- (6) **BE SEEN** - In order to enhance the see and the see-and-avoid concept, you are encouraged to turn on your ant collision lights or other appropriate lights whenever your engines are running. You are further encouraged to turn on your landing lights when operating below 10,000' MSL, day or night, especially within 10 miles of an airport, or in areas of reduced visibility. While use of landing lights is appreciated, please observe aircraft manufacturer's recommendations for landing light(s) operations.
- (7) **ABOVE ALL, AVOID BECOMING COMPLACENT!!!!**

## GUIDE TO AN EFFECTIVE SCAN

How well do you scan? Next time you are out and about check yourself. See how long you go without looking out the window. If you find that you glance out and give the old one-two without stopping to focus on anything or you stare out into one spot for an extended period of time, your "scan" is inadequate and you may be headed for a midair collision.

So what can you do? **LEARN AN EFFECTIVE SCAN PATTERN!** There are currently two basic methods that have proven best for pilots. The first is the "side to side" pattern (top picture). Start at the far left of your visual area and make a methodical sweep to the right, pausing in each block to focus. At the end of the scan, return to your instruments. The second is the "front to side" pattern (bottom picture). Start with a fixation in the center of the block of your visual field. Move your eyes to the left, focusing in each block, swing quickly back to the center block, and repeat the procedure to the right. In either case, your scan is most effective when you first focus your eyes on something on or near the horizon prior to beginning your methodical scan pattern.



There are other methods of scanning that may be as effective for you as the two listed above. Whichever method you choose, it takes a lot of hard work to become proficient at it. The best way to become proficient is through practice, and the best way to practice is on the ground, in your own airplane or the one you usually fly in. Good luck, and we'll "**SEE**" you in the skies

# FLY SAFE



# SHARE THE AIR

As Of 14 August 2012