

**The following notes were prepared for a specific test of a specific aircraft at a specific location. It may be referred to as an example for scope and content, but should not be considered as a complete and ready plan to be used for any other aircraft. It is provided as a reference for those preparing for their own first flights.**

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December 2011**

## **NX13PL - First (and second) Flight Plan**

### Objectives

- 1) Everyone comes home in one piece!
- 2) Aircraft is proven to be airworthy with sufficient power for flight, controllable through normal speed regime, and has no hazardous systems issues.
- 3) No adverse affect on engine break-in
- 4) Handling qualities sufficient for flight into and out of Polly Ranch

### Overview

First flight for the RV-3 will consist of a take-off from Polly Ranch, followed by orbits of the field at a distance and altitude from which a power off landing is assured should trouble arise. These orbits will continue until we have determined that it is safe to leave the vicinity of the runway (three to five expected). Altitude will remain below the Class B airspace (2,000'). Once it is determined that an immediate abort capability is not required, the flight will proceed outbound to the area south of Polly Ranch for basic handling quality evaluation, rough airspeed indicator correlation, and approaches to stall for landing flare familiarization. Once these are complete, the flight will proceed to Pearland Regional Airport for a landing.

Following landing at Pearland, the cowling will be removed for FWF inspection, and a detailed exterior inspection of the airframe to assure that no damage has results, and the aircraft is ready for further flight. Minor repairs will be made if the problems are understood. If there is a question of readiness for further flight, the aircraft will remain at Pearland for repairs. If the airplane is considered airworthy, flight #2 will commence, involving a launch from Pearland and a transit to the practice area near Chocolate Bayou (south of Polly Ranch), outside Class B. The purpose of this second flight is additional

familiarization and to put time on the engine for break-in. Racetrack pattern will be flown at an appropriate altitude (4,000' nominal) to accomplish break-in. The flight should last approximately 45 minutes to 1 hour, and will recover into Polly Ranch if the landing at Pearland has proven to be benign. If landing control is questionable, then recovery will be back in to Pearland.

### Personnel Roles and Responsibilities

**RV-3 Test Pilot:** Pilot in Command of the test aircraft will take any action he feels necessary for the safe outcome of the flight. He will operate under direction of the test Conductor in the chase plane unless communications are lost, or conditions require rapid action which preclude consultation.

**Test Conductor:** Will have overall authority for the conduct of the flight test, and see that the flights proceed according to plan to accomplish the stated objectives. Test Conductor has overall authority to decide to proceed with the flight according to prescribed limits for weather and safety considerations. Will be responsible for overall situational awareness of aircraft operations and local airspace management. Test Conductor will manage communications with the Test aircraft and keep track of execution of the flight test plan.

**Chase Pilot:** responsible for safe conduct of chase operations and traffic awareness. Chase pilot will manage communications “up and out” of the Flight, handling CTAF communications for both Test and Chase as required.

**Ground Crew Chief:** Responsible for assisting the test Pilot in preparation of the RV-3 for flight and assisting the Test Pilot in determining readiness. Responsible for ground rescue and extrication (if required) and for overall ground safety operations. Will maintain overall situational awareness of traffic in the Polly ranch area during local operations. Will relocate to Pearland and assist with detailed examination of the RV-3 after first landing, and the determination of readiness for flight #2. Will transport required tools and equipment to Pearland, and if remote recovery is required, will go directly to the scene as directed by Chase aircraft or other information.

**Photographer:** Ground photographer will be responsible for photo documentation and will work with the Ground Crew Chief as required to handle ground operations. A camera will also be provided to the test Conductor in the chase aircraft, but use of this camera should not in any way detract from his primary duties. Video of first take-off and landing should be obtained if possible.

### Chase Plane Purpose

While the chase plane is not essential for the first flight, it is highly desired for the following reasons:

- 1) Provides immediate, nearby visual involvement of the Test Director
- 2) Provides communications relief for the Test Pilot, allowing him to concentrate on the RV-3.
- 3) Provides continuous communications with the test Director for questions and prompting on the plan.
- 4) Can provide immediate location support should an off-airport landing occur.

### Communications

Air to Air communications will be maintained on 122.75 between Chase and Test Aircraft. Alternate frequencies will be 122.85 or 123.45. Polly ranch CTAF is 122.9. Pearland CTAF 122.8. Contingency frequencies to be available to all units would be Houston Approach (134.45) and Ellington Tower (XXX.XX).

Test Pilot will be prime on Air to Air, and monitor CTAF as able (but is not expected to hear all CTAF calls). Chase Pilot will be prime on CTAF. Test Director will be prime on Air-to-Air, and will monitor and use CTAF as required.

Cell phones will be carried by all operational units, and used for ground to ground communication when VHF is not available.

### Phone Numbers:

Paul (Test Pilot)	XXX-XXX-XXXX
Louise (Chase Pilot)	XXX-XXX-XXXX
Steve (Test Director)	XXX-XXX-XXXX
Dave (Ground Crew Chief)	XXX-XXX-XXXX
Ernie (Photographer)	XXX-XXX-XXXX
Mike (Pearland Contact)	XXX-XXX-XXXX

### Abort Modes

Intact Runway Abort - Available to Test Pilot if there is sufficient runway remaining to affect a stop before reaching the trees at Polly Ranch.

Low Abort - For an engine failure (or other failure that renders further flight impossible) after it is safe to stop in the runway environment, but before an altitude of 500 feet, the test Pilot will affect a forced landing near or in Clear Creek to avoid danger to houses.

Medium Abort - For an engine failure (or other failure that renders further flight impossible) between 500 feet and 1,000 feet, the Test Pilot will land in the open fields across FM 518.

High Abort/Precautionary Landing - At altitudes above 1,000', and within gliding distance of a normal landing at Polly Ranch, For and engine failure or or other failure that makes further flight unsafe, assuming that the aircraft is controllable, immediate landing at Polly Ranch will be performed. If aircraft directional control is in doubt, landing will be made in the open fields across FM 518.

Emergency Landing - for a failure where landing is an option, but immediate post-landing emergency services is desired (oil leak), Ellington will be a viable option at the discretion of the Test Director and Test Pilot.

Bail-out - The Test Pilot will bail out if there is an observed, non-extinguishable fire or loss of ability to control the aircraft. Bail-out will be initiated with a pull-up to maximum attainable altitude, consideration will be given to the aircraft's descent vector taking it into an open area, and the pilot will bail out. The Chase aircraft will contact Houston Approach with a Mayday call if Class B airspace is penetrated. Ground Crew Chief will call 911 for emergency services.

### Facilities

Ground facility at Polly Ranch will be the Dye's Hangar  
Ground Facility at Pearland will be Mike Elliott's hangar area

### Weather

Weather minimums require cloud bases at or above 2,000' for first flight, visibility greater than 7 miles, and crosswind component less than 7 knots. Gust factors should be less than 5 knots. Wind must favor Runway 11 at Polly Ranch, no tailwind component is allowed. Expected runway at Pearland will be runway 14 as a result.

### Emergency Operations

In the case of an off-airport landing, the chase plane will determine the precise location of the landing and maintain an orbit over the site. They will communicate with the Ground Crew Chief via radio or cell phone the location of the site, and help direct the ground team to the RV-3. If the Test Pilot cannot signal his condition, the Ground Team will call 911 to have emergency personnel dispatched to the scene. The Test Pilot has the

capability and discretion to call 911 if he is able. Chase Plane will be released to land once Ground Team has positive contact with the Test Pilot.

### Detailed Flight Plan

Flight #1:

- 1) Go/NoGo from Chase, RV-3, and Ground
- 2) Chase plane start and departure
- 3) Chase plane assumes orbit around Polly Ranch and radios "Go"
- 4) RV-3 engine start, Go from Ground Crew, taxi for departure
- 5) RV-3 calls "Ready for Take-off, makes CTAF call, departs
- 6) Immediate climb to 1500', right hand turns within gliding distance of Polly Ranch, initially on south side to allow reaching FM518 fields. Chase flies very loose formation as required to maintain RV-3 contact, without restricting RV-3 freedom of maneuvering.
- 7) RV-3 maintains 1500', Orbits Polly Ranch a minimum of 3 Orbits,( nominally 5 - 7) to assure :
  - a) adequate engine temperature
  - b) good control
  - c) systems parameters in range
- 8) When the Test Pilot and Test Director are comfortable with leaving the Polly Ranch area (system's parameters stable), the RV-3 will proceed south to the open area fields for an airspeed indicator calibration check. Chase will fly close enough to assure matched speeds, and airspeed indicator readings will be exchanged between Test Pilot and Test Director.
- 9) Assuming stable systems and a good airspeed check, the flight will proceed south until it is out from under the 2,000' Class B floor, climb to 3,000', and perform approaches to stalls. Characteristics and buffet speed will be determined and recorded by Chase. Chase will maintain adequate clearance so as not to be a factor to the Test Pilot. Chase will watch for traffic.
- 10) Flight will proceed to landing at Pearland. Chase Pilot will determine traffic loading at Pearland, and inform the Test Pilot of the situation, and advise the best way to enter traffic. A normal pattern will be flown, with Chase flying loose formation to touchdown. Chase will fly a full pattern following test touchdown, and return to land.
- 11) Flight will taxi to servicing area (nominally, Mike Elliot's hangar), for debrief and inspection.

Ground team is released to return to Polly Ranch when Flight #2 is off the ground.

Flight #2 (assuming a normal Flight #1)

Aircraft will launch in sequence, RV-3 first, Chase second, and will proceed to the practice area near Chocolate Bayou. Altitudes will be kept below the Class B airspace,

and will climb to 5,000' once clear of the Class B. Primary purpose of the flight is continued engine break-in, so power will be kept at approximately 75%. Per Mattituck instructions, leaning will be to 80 degrees ROP. A racetrack pattern will be established between the Santa Fe Blimp Base and DELVE Intersection (approximate). Engine parameters will be statused by the Test Conductor. All data will be recorded using the EFIS recording capability. Return to Polly Ranch will be initiated no later than 40 minutes after take-off, to keep flight time below 1 hour, and return before winds build up.

Chase plane will fly loose formation, and may approach closely for observation. Chase will shadow the landing pattern and fly a full pattern to landing to allow the RV-3 to clear the runway.