

# LonAire



N477T

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LonAire is proud to present N47TT, a Turbine Jetprop 840 Twin Commander. It is pressurized, air conditioned, and equipped to provide great capabilities, flexibility, and unprecedented training opportunities. Recently upgraded to the Dash Ten Engines, it now has 1,000 HP per engine as well as greater reliability. With this aircraft's speed and range, we can fly the mission from a greater distance, be able to reach an IFR alternate and still have fuel reserves. With all of the equipment installed it is much more than a Type I Air Tactical Platform, perhaps a Type I + + +?



New for 2011:

#### Quad Wave Relay Radio by Persistent Systems.

One of the most unique and powerful features of this aircraft, and one which separates this aircraft from most all others, is the live video feed capability. In cooperation with the Fire and Technology Development Center in Missoula, MT we can send live streaming video from any of the cameras onboard to receivers on the ground that then relay the signal to a web-based server. Anyone with internet access and the proper authorization can view the video live.

<http://www.persistentsystems.com/>

#### LonAire Flying Service' Web Site:

Developed by Randy at Eye in the Sky [www.eyeintheskymc.com](http://www.eyeintheskymc.com) the web site will provide a resource for the latest developments and technology at LonAire. Also, on the site will be an area with instructions on how to access the "Live Video Feed" or a link directly to the video. [www.lonaireflyingervice.com](http://www.lonaireflyingervice.com)

New in 2010:

#### Stabilized Infrared and Color Camera Combination Gimbal:

The Cloud Cap Technology Retractable Tase Duo Camera Gimbal. It provides a full featured gimbal control with a moving map interface. Other features include object tracking, scene tracking, steering and geo pointing. You can point it at a specific location and it can tell you the lat & long of the location that you are looking at. It is controlled either by the computer or a game boy joy stick.

[http://www.cloudcaptech.com/gimbal\\_tase200.shtm](http://www.cloudcaptech.com/gimbal_tase200.shtm)

#### Computer and touch screen monitors to control Tase Duo Gimbal:

A Falcon high performance lap top computer controls the gimbal and runs moving maps. We also, attached two HP touch screen monitors, one at the air attack position and one near the rear pedestal.

#### Live Video Downlink to the Internet:

Live video enabled the Incident Command Post, the Forest Supervisors Office, Dispatch, and other interested Fire Management Personnel instant access to live video of the fire. This allowed Fire Managers to monitor the intensity and progress of the fire during the day, as well as, the success of several night time burning operations.

### Scheduled Night Flights:

We flew some of the first scheduled air tactical missions conducted at night. We were able to monitor several night time burning operations, locate spot fires outside control lines and assist in mapping fire perimeter changes for updating maps.

### Additional Pilot Available:

The addition of an additional pilot in 2010 allowed us to make the aircraft available for early morning and late night flights. We were able to manage pilot duty time requirements to allow daily availability of the aircraft.

### New in 2009:

Installed Side Facing FLIR Infrared and Forward Vision's MaxViz Infrared Cameras:  
Installed one of the first Infrared Cameras on CWN aircraft.

Installed Four Additional DVD Recorders:

These allow the simultaneous and continuous recording of four independent cameras.

### Other Equipment Includes:

- Digital Video and Audio are recorded on DVDs for each mission:

There are six recorders; four record cameras individually and continuously, two more record simultaneously the video input that is selected from any of the cameras. The date, time, and aircraft position are embedded in the video. Audio from incoming and outgoing radio traffic along with intercom traffic are also recorded on each disc. These discs can be used to see, monitor, and document actual fire behavior and growth. They are available immediately after each flight and can be sent to fire managers and given directly to trainees for review with the trainer or for self evaluation. You can capture still images from any camera and send that image almost instantly to ground firefighters or fire management.

- Four NAT NPX 136D Digital FM Radios:

We are able to clone frequencies to all four radios from a Laptop in flight.

- Four VHF- AM (Victor) Radios:
- Three Technisonic A711 Audio Panels:  
These allow each operator individual volume control for each radio.
- Three busy light indicator bars:  
These allow each operator to see which radio is calling and if any are transmitting.
- The Garmin 696 Portable GPS:
- Satellite XM Weather:  
Includes weather and displays TFR's directly onto the moving map while in flight
- Four fixed cameras, two color and two infrared:  
One of each camera looking forward and one of each looking to the right at the fire. Individual cameras can be independently selected for viewing on multiple screens.
- 24 Volt DC, 12 Volt DC and 110 Volt AC power is available:  
You can power almost anything; computers, printers, cameras, etc.
- The Bendix/King Traffic and Multi-hazard Advisory System :  
(TCAS and Terrain Avoidance)
- The Garmin GNS 530 GPS Moving Map, with a traffic display:
- The Apollo MX 20 MFD Moving Map:  
This displays traffic, Jeppesen approaches, terrain, and airspace boundaries.
- The Bendix/King Color Digital Profiling Weather Radar:
- Satellite Phone System:  
Phone includes voice, data, and Automatic Flight Following. Anyone can pick up a phone and call us direct in the air.
- Rear Pedestal Mounted Console:

Positioned in the rear is a pedestal-mounted console that includes an audio panel, busy lights, a VHF-AM Victor radio, an FM radio, and a Sat Phone Controller. This equipment is identical to the front and allows the independent control of all communication equipment by a third crew member. Trainees get immediate exposure to the operation of the radio equipment even while they are in the back. The trainee can

transition to the front sooner because of this exposure and because the ATGS has complete access and control of all radios from the rear. You can utilize two ATGS's to split the load, or a technician if the mission requires it. The pedestal is situated in front of the rear seat.



THE FRONT PANEL



Most of the communication equipment is mounted in the front panel. This allows for the most natural position for viewing. There is very little need to be looking down to the front lower console. Push to Talk can be accomplished in three ways, a button on the control yoke, by using a foot switch, or by a transmit button on a hand held joy stick that also allows you to scroll through FM radio channels.



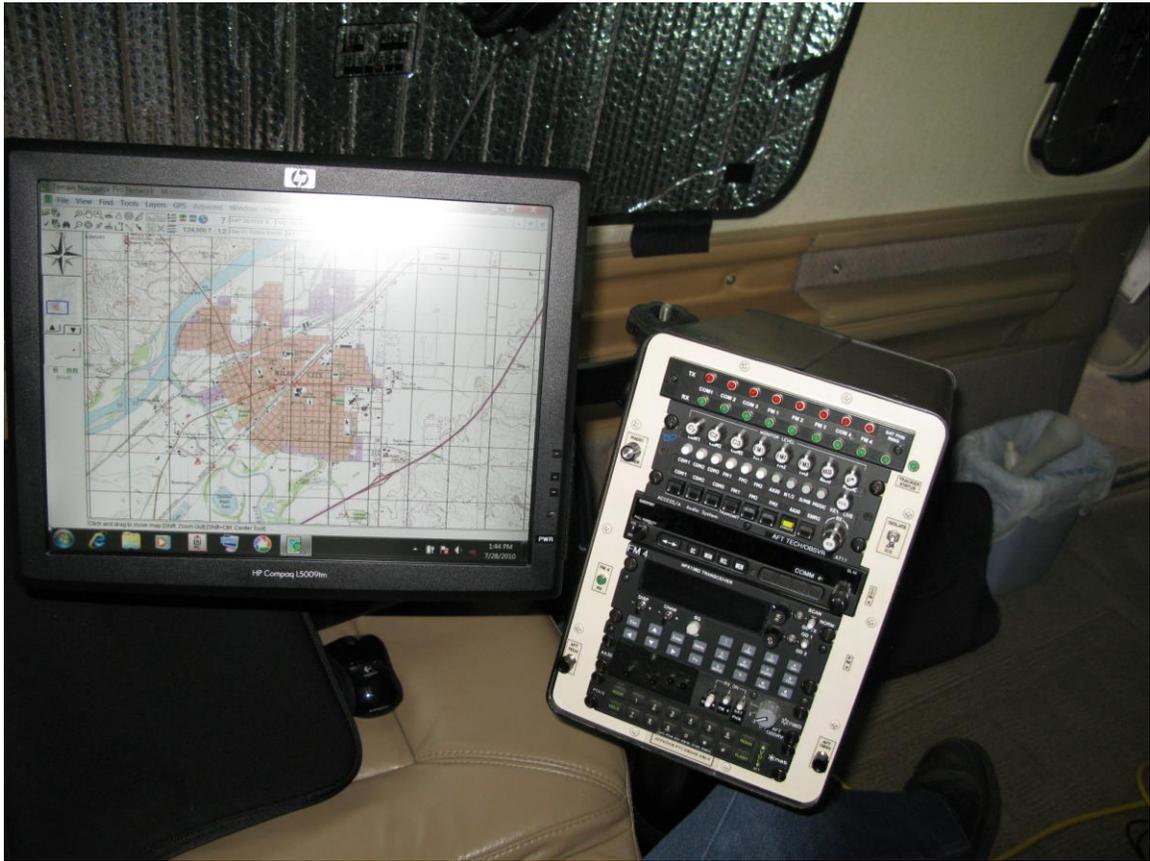
THE FRONT PANEL with MONITOR



THE FRONT CENTER CONSOLE



The Rear Console and Monitor



The Rear Console and Monitor



The Rear Console



The New Cloud Cap Technology  
Tase Duo Stabilized Gimbal  
Infrared and Color Camera Combination



The Tase Duo Stabilized Gimbal Installed on N47TT



The Forward Looking Infrared Camera



The Side Looking FLIR Infrared Camera



Fixed Infrared Camera Locations on the Aircraft



Color camera picture.



Infrared camera picture of the same area.  
White is heat and black is an unburned island.



The six DVD recorders used to record the missions and the Falcon computer.

As you see from this extensive list of equipment and capabilities we have always been on the leading edge of technology. These advances have helped make aerial supervision safer, more effective and efficient. However, I have never seen a single piece of equipment make such a profound improvement to our mission as the Infrared Cameras. Frequently you would find us waiting at the airport for the fire to call and say that the inversion has lifted. We could then go look to see if we could be effective. Many times we would struggle to get below the inversion in order to see anything of the fire. Now we can schedule reliable effective coverage while safely and comfortably flying above the inversion. Now we can see right through it. We have three infrared cameras onboard. One looks straight forward, one looks to the side at the fire and the third is on a controllable gimbal that can be aimed or locked on a specific object, scene or position. These cameras can see through the smoke and the inversion. They display vivid and detailed terrain features, as well as fire activity. This allows us to operate safer while providing very effective aerial supervision and more reliable information to the ground firefighter and fire management. This is all done at a time, when without the cameras we might not even be able to fly. Burn out and firing operations can be closely monitored. Spot fires and slopovers can be detected immediately, even at night. This can eliminate a huge burden on the ground forces conducting those operations. We can see where the fire is active, what has burned and what has not burned. We have observed and reported spot fires and fire movement that even the people on the ground could not see. Additionally, we are able to utilize the infrared to see air tanker and helicopter drops. The water or retardant is quite visible on the screen. We see exactly where it lands and as well the thin or missed spots that may exist in the coverage. Not only in smoke are these advantages of the camera noticeable. We can see most things better than the naked eye is able to when there is no smoke and with a clear sky.

With the obvious visibility advantages of a Turbine Commander, the proven reliability and capabilities of turbine power, combined with the infrared cameras, live video downlink, and other equipment installed in this aircraft, we have strived to provide the safest and most effective fire fighting environment possible, not to mention the best training opportunities available.

Another important ingredient in this mix is the pilot. I am the primary pilot for the company, the President and owner of LonAire and the aircraft. I have 8,700 total flight hours with 2,400 hours of Air Attack piloting experience. I have had the opportunity to work on numerous large fires with complex and mixed aircraft operations in all types of terrain and conditions. It has been my privilege to work and train with numerous very experienced and capable Air Tactical Group Supervisors.

If you have any questions or would like references please contact me at 406-232-1354 or [lonaire@midrivers.com](mailto:lonaire@midrivers.com). Also, please don't forget to visit our new Web Site at [www.lonaireflying.com](http://www.lonaireflying.com). I look forward to the opportunity of working with you.

Sincerely yours,

*Lonnie Leslie*

Lonnie Leslie  
President