**CHAPTER 80**

**AIRCRAFT**

Infrared Aircraft

Infrared Aircraft are National Interagency Resources.

**Infrared Aircraft – Forest Service**

 Flight Rate

 Aircraft Per Hour

N144Z – Cessna Citation $ 1340

N149Z – King Air 200 $ 920

Rates are subject to change. For further information, contact the FS Region 4 Aviation Operations Office.

PERFORMANCE

N144Z Cessna Citation

 -- Block speed – 370 kts.

 -- IR Scanner speed – 240 kts

 -- Fuel – Jet.

 -- Endurance for infrared missions (2 Pilots, 1 Technician) 3.0 Hours (with reserves

 -- Maximum take-off weight – 14,800 lbs

 -- Runway – Hard surface, minimum ~~4~~,000 feet @ sea level

 -- Passenger configuration – 6 passengers + baggage.

N149Z King Air 200 (Cargo Door)

 -- Block speed – 240 kts.

 -- IR Scanner speed – 220 kts

 -- Fuel – Jet

 -- Endurance for infrared missions (2 Pilots, 1 Technician) 4 Hours (with reserves

 -- Maximum take-off weight – 12,500 lbs.

 -- Runway – Hard surface, minimum 4,000 feet @ sea level

 -- Passenger configuration – 6-8 passengers + baggage

 -- Cargo configuration – 2,000 lbs. (2 Pilot), 2 + 30 hour endurance (with reserves).

Airborne Thermal Infrared (IR) Fire Mapping and Detection

* Capabilities and Limitations:
* Infrared Scanners:
* Infrared energy can penetrate smoke and haze, but is limited by clouds and fog. Infrared energy follows a line-of-sight path.
* For best results, imagery should be taken between the hours of 1000-1400 and between one (1) hour after sunset and one (1) hour before sunrise. Imagery flights can be made at other times, but expect degradation in fire detection.
* Infrared Aircraft:
* All infrared aircraft can air drop imagery. The final decision for a drop will be left to the Pilot-in-Command and only when positive air-to-ground communications has been established.
* Aircraft normally require a 5,000 foot, hard-surfaced, lighted runway. A 28-volt, 1,000 amp ground power unit (GPU) should be provided for aircraft starting.

Tactical Aircraft

Lead Planes/Aerial Supervision Aircraft – FS

For a complete list of all Lead Planes/Aerial Supervision Aircraft, refer to the following web site: <http://www.nifc.gov/nicc/logistics/aviation/Lead_Planes.pdf>

Air Tactical Avionics Typing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Required Equipment** | **Type 1** | **Type 2** | **Type 3** | **Type 4** |
| Aeronautical VHF-AM radio transceivers | 2 each | 2 each | 2 each | 2 each |
| Aeronautical VHF-FM radio transceivers | 2 each | 1 each | 1 each |  - |
| Transponder & altitude encoder | X | X | X | X |
| Panel Mounted GPS | 1 each | 1 each | Note 1  | Note 1 |
| Handheld GPS |  - | - | Note 1 | Note 1 |
| Separate audio control systems for pilot and ATGS | X | X | - | - |
| An audio control system | - | - | X | X |
| Audio/mic jacks with PTT capability in the rear seat connected to the co-pilot/ATGS's audio control system | X | X | - | -  |
| An intercommunication System | X | X | X | X  |
| AUX-FM provisions | Note 2 | Note 2 |  |  |
| AFF | Note 3 | Note 3 | - | - |
| 2 - aeronautical VHF-FM antennas | - | - | - | X |
| An accessory power source | - | - | - | X |
| A portable Air Attack kit |  |  |  | X |

Note 1: Type 3 and 4 aircraft must have either a panel mounted GPS or a handheld GPS (subject to local contract requirements).

Note 2: Type 1 and 2 aircraft must have either AUX-FM provisions or an additional aeronautical VHF-FM radio transceiver.

Note 3: AFF is required on Type 1 and 2 exclusive use aircraft.

Note 4: Air Attack kits may be agency or contractor furnished.

Smokejumper Aircraft

For a complete list of all Smokejumper Aircraft, refer to the following web site: <http://www.nifc.gov/nicc/logistics/references/Smokejumper_Aircraft.pdf>

Federal Airtankers

The primary mission of federally contracted large fixed-wing airtankers is initial attack operations.

The NICC will prioritize and allocate federal airtankers by positioning them in areas of current or predicted high wildfire danger or activity.

For a complete list of all federal airtankers, refer to the following web site:

<http://www.nifc.gov/nicc/logistics/references/Air_Tankers.pdf>