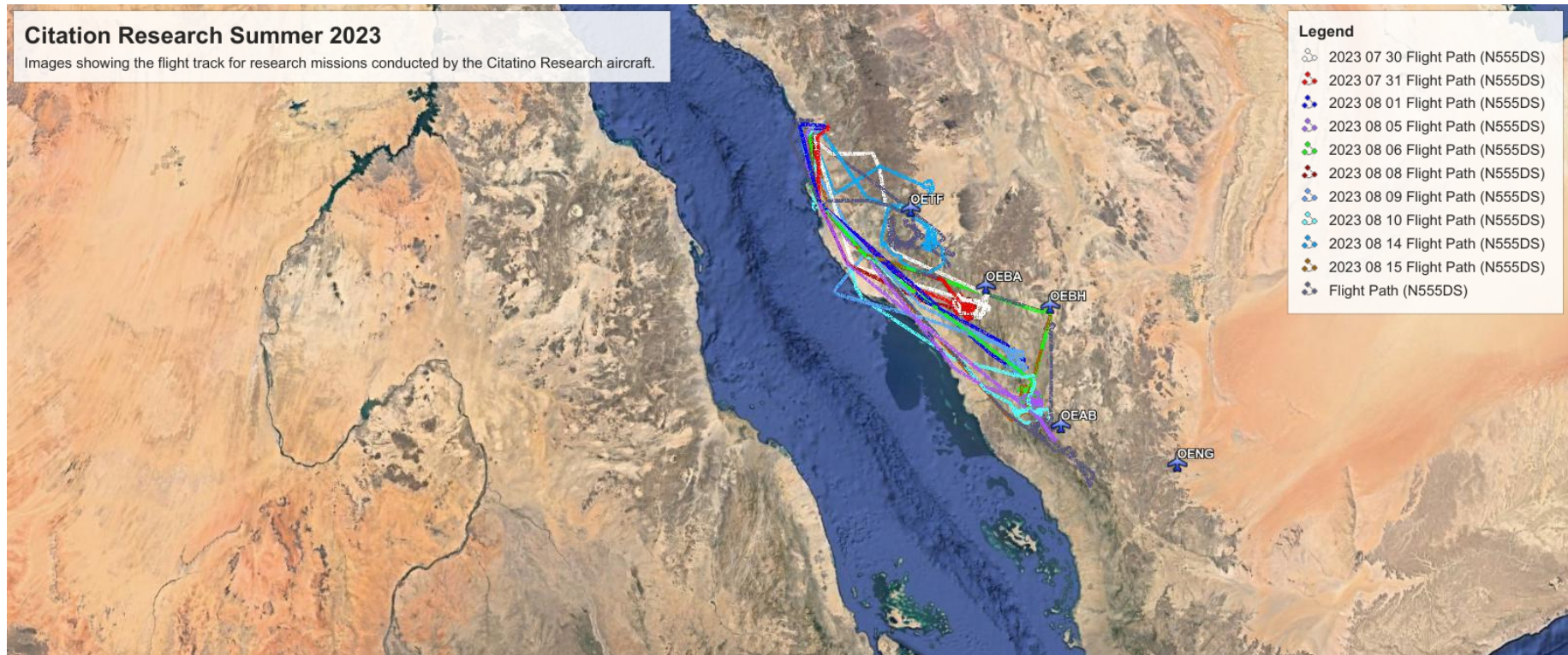


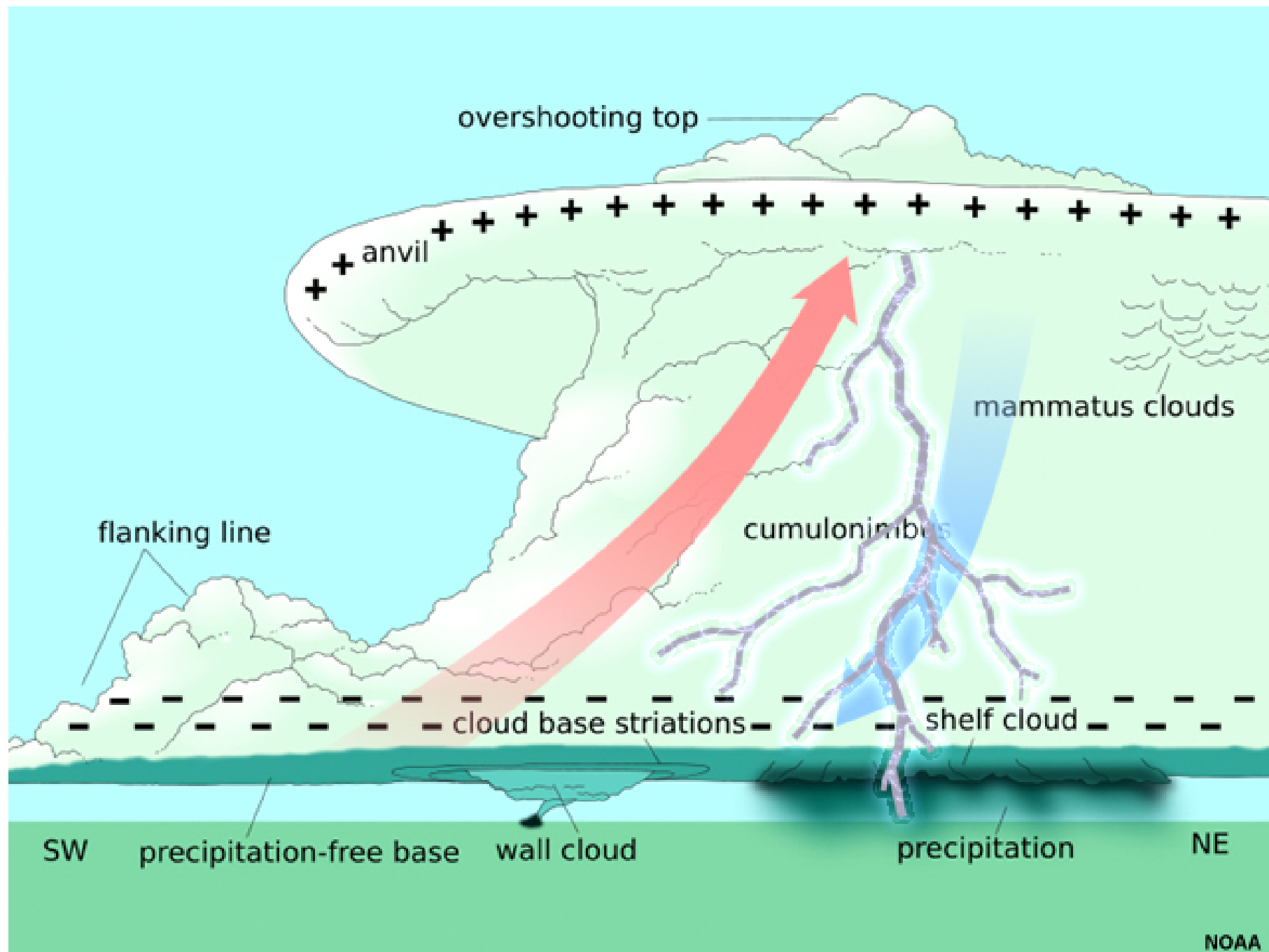
Flight Safety in Weather Modification Operations



Key Flight Segments

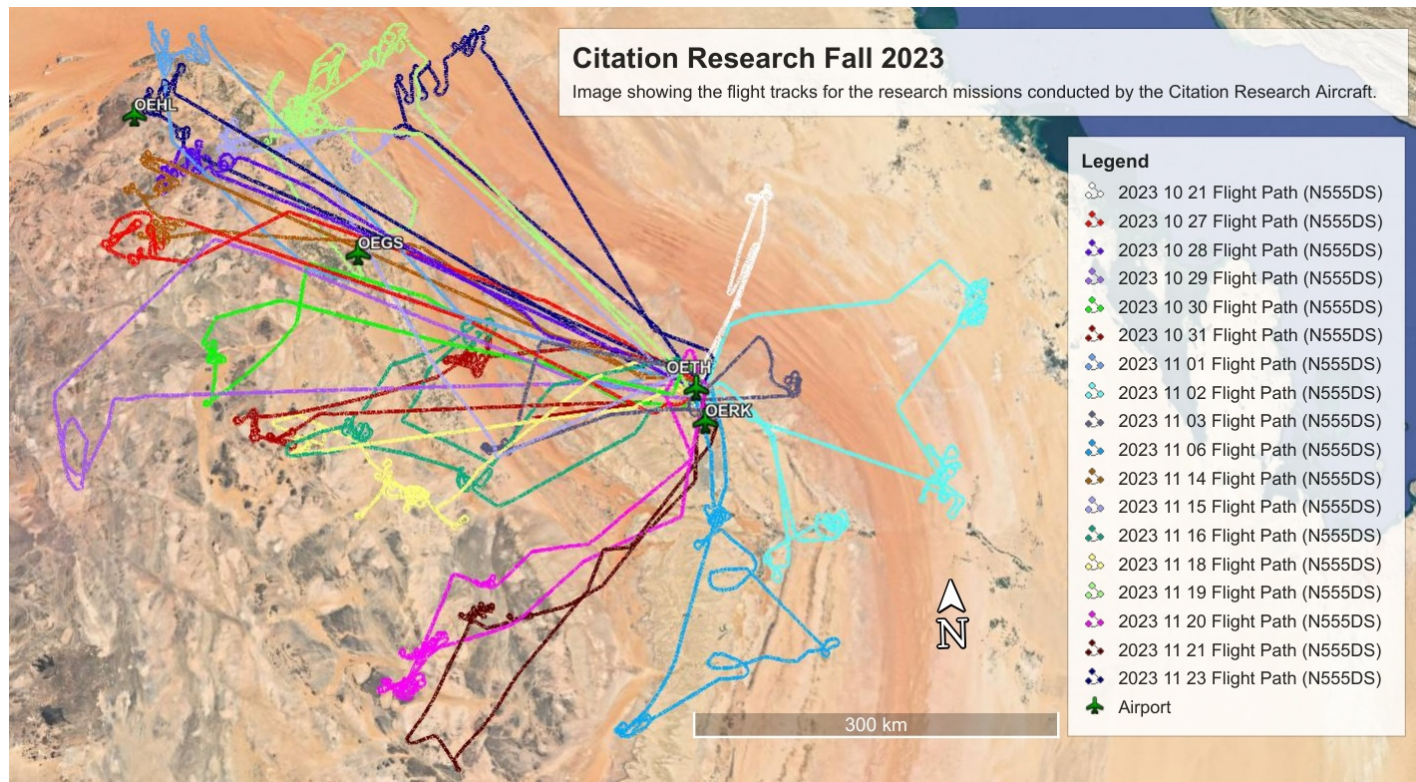
- Flight Planning
- Seeding Considerations
- Departure
- Landing
- Enroute





Flight Planning

- **Know your Airplane**
- **Airworthiness**
- **Serviced**
- **Supplies**
- **Cockpit**



Flight Planning

- **Know Your Airports**
- **Alternates**
 - IFR and VFR
- **Approaches**
- **Lighting**

Flight Planning

- **Know Your Atmosphere**
- **Stability**
- **Winds**
 - Storm motion
 - Off-field landing options
- **Forecast**
 - Duration, Coverage, Intensity

Flight Planning

- **Know Yourself**
- **Physiology**
 - Are you safe to fly?
- **Limitations**
 - What are your personal minimums?

Takeoff and Landing

- **Weather**
- Primary hazard is low level wind shear due to:
 - Gust fronts
 - Microbursts
- High temperature runway requirements
- **Airport**
- Lights
- Obstructions

On Station

- **Where am I?**
- **Storm reference**
- **Target area reference**
- **Other aircraft**
- **Clearances**

On Station

- **What's happening?**
- **Weather Trend**
 - **Visual (tops, bases, outflows, lightning)**
 - **Radar**
 - **Communications**
- **Below-base Conditions**
 - **Scud, Inflow Strength, Cloud Base Features**

On Station

- **What's going to happen?**
- **What's the forecast?**
- **What do your eyes tell you?**
- **What's the timing?**
- Overall picture
- **Projection for your aircraft ops**

On Station

- **Where's the OUT?**
- **Bail-out heading**
- **Radar help**

Flight Operations

- **Emergency Procedures**
- **FLY THE AIRPLANE**
- **Gather facts**
- **Go to bail-out heading**
- **Communicate**
- **Leave power alone unless absolutely necessary**
- **Need two of the following:**
 - **Altitude**
 - **Airspeed**
 - **Ideas**

Flight Operations

- **On-top Seeding**
- **Maintain attitude, watch airspeed**
- **Don't penetrate without knowing what's on the other side**
- **Generally penetrate perpendicular to the shear**
- **Test the cloud edge if in doubt**
- **Turn on anti-ice before penetration**
- **If props ice up, change RPM**

Flight Operations

- **Base Seeding**
- **Don't get sucked up**
- **Beware of lowering bases**
- **Avoid outflow boundaries, back side of storm**
- **Watch for other aircraft**

Flight Operations

- **Radar**
- **Be careful about penetrating storm tops $>30,000'$**
- **Don't fly through reflectivities > 50 dBz**
- **Don't ever fly toward a radar shadow**