

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO

EDGE OF SPACE SCIENCES INC. (EOSS)

ADDRESS

Russell Chadwick
4371 North 63rd Street
Boulder, Colorado 80301
Phone: (303) 530-0228
Email: Russell.B.Chadwick@noaa.gov

This certificate is issued for the operations specifically described here. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in the certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

1. **Operation:** Unmanned balloon launches for research purposes.
2. **Launch sites:** Listed below or as coordinated with ATC.
Fatton Ranch - Windsor, CO (GLL250019), Latitude 40°28'25.2" N., Longitude 104°57'45" W.
Deer Trail - Deer Trail, CO (BVR198011), Latitude 39°36'37.8" N., Longitude 104°02'29.4" W.
Crow Valley - Briggsdale, CO (GLL035013), Latitude 40°38'45" N., Longitude 104°20'17.4" W.
Wiggins Rest Stop - Wiggins, CO (GLL110028), Latitude 40°14'43.8" N., Longitude 104°03'13.2" W.
Eaton Middle School - Eaton, CO (GLL267008), Latitude 40°31'36"N., Longitude 104°43'25"W.
3. **Maximum altitude:** 115,000 feet Mean Sea Level (MSL).
4. Balloon position will be in near real time at www.wxqa.com/cgi-bin/balon1.cgi or www.eoss.org/cgi-bin/balon1.cgi.
5. Balloon launch carrying up to a 27 pound string of experiments. Balloon will burst, then package parachute descent for approximately 45 minutes to the surface.
6. **Times:** 1300 - 2200 UTC or as coordinated with ATC.

WAIVED REGULATIONS BY SECTION AND TITLE

14 CFR 101.33 (b), (c) Operating Limitation; 101.35 (a) (3) Equipment and marking requirements.

STANDARD PROVISIONS

1. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or any State or municipal official charged with the duty of enforcing laws or regulations.
2. The holder of this certificate will be responsible for the strict observance of the terms and provisions contained here.
3. This certificate is nontransferable.

NOTE. - This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 6, inclusive, are set forth on page two.

This certificate is effective on April 1, 2013, 000 UTC, through December 31, 2013, 2300 UTC, subject to cancellation at any time upon notice by the Administrator or his authorized representative.

Western Service Center
(REGION)

2/8/13
(DATE)

BY DIRECTION OF THE ADMINISTRATOR


Clark Desing
(SIGNATURE)

Manager, Operations Support Group
(TITLE)

EDGE of SPACE SCIENCES, Inc. (EOSS)
SPECIAL PROVISIONS (WSA-1329-BAL)

1. Authority to deviate from the Federal Aviation Regulations (FAR) is limited to specific regulations shown on the Certificate of Waiver. All other applicable FARs must be fully complied with.
2. **You must make the following notifications to concerned facilities as listed below:** NOTE: The notification information listed below is necessary for Air Traffic Control (ATC) to advise known aircraft of the balloon and payload location. It does not alleviate EOSS's responsibility to ensure safety to unknown aircraft, persons or their property.
 - a. **Seven (7) days in advance of the launch:** Contact Denver Air Route Traffic Control Center (ARTCC) Traffic Management Unit (TMU) at (303) 651-4252. Provide your pre-launch notice.
 - b. **Seven (7) days in advance of the launch:** Contact Denver ARTCC Airspace and Procedures Office, either by telephone at (303) 651-4532 or fax at (303) 651-4220. Provide your pre-launch notice.
 - c. **Twenty-four (24) hours in advance of the launch:** Contact Denver Terminal RADAR Approach Control (TRACON) at (303) 342-1590. Provide your pre-launch notice.
 - d. **Between 12 and 72 hours prior to conducting operations:** Contact the Prescott Automated Flight Service Station (AFSS) at (877) 487-6867 and ask to issue a Notice to Airmen (NOTAM) referencing this waiver.
 - e. **Between 12 and 72 hours prior to launch** contact Denver ARTCC Airspace and Procedures Office, either by telephone at (303) 651-4532 or fax at (303) 651-4220. Provide the most current forecast trajectory.
 - f. **Between 30 and 120 minutes prior to conducting operations:** Call Denver ARTCC at (303) 651-4252 to advise them of the forecast trajectory.
 - g. **Between 30 to 120 minutes prior to conducting operations:** Call Denver TRACON at (303) 342-1590 to advise them of the forecast trajectory.
 - h. **Fifteen minutes prior to launch:** Call Denver ARTCC TMU at (303) 651-4252 to ensure the cell phone used at the site is working and able to send and receive phone calls.
 - i. **As requested by Denver ARTCC and Denver TRACON:** Provide launch information, en route position reports and "on deck" reports. Advise Denver ARTCC when the balloon has burst or when the balloon is being cut down.
 - i. **Prior to issuing the cut down command:** In the event an unplanned early termination of flight occurs, call Denver ARTCC at (303) 651-4252 to coordinate the optimum time for cut down, to avoid possible conflict with high traffic volume and known aircraft.
 - j. **When operations have ended:** Advise Denver ARTCC at (303) 651-4252 and Denver TRACON at (303) 342-1590 when the balloon has landed. Call Prescott AFSS at (877) 487-6867 and ask to cancel the NOTAM.
3. Provide the following information to each facility upon **initial** notification:
 - a. Verify the launch location.
 - b. Time of launch and duration of activity.
 - c. Ascent rate, direction, speed, altitude of operation, package separation information, and estimated impact location.
 - d. Telemetry monitoring capabilities. Position updates via established internet site are required for each descent package (give separate position reports). Verify the website: www.wxqa.com/cgi-bin/balon1.cgi and www.eoss.org/scgi-bin/balon1.cgi.
 - e. Means of establishing contact with launch site (cellular or satellite phone number).
 - f. Capability to advise the FAA when all launched objects have returned to earth.
4. Safety spotters must scan the airspace within 5 miles of the launch site to ascertain the area is clear of aircraft and will remain clear of aircraft during balloon package launch operation.
5. All operations will be conducted in accordance with the holder's safety rules and codes.
6. The holder must be responsible for safeguarding persons and property on the ground and must ensure all persons connected with the operation are familiar with the waiver and the above special provisions.

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO

EDGE OF SPACE SCIENCES INC. (EOSS)

ADDRESS

Russell Chadwick
4371 North 63rd Street
Boulder, Colorado 80301
Phone: (303) 530-0228
Email: Russell.B.Chadwick@noaa.gov

This certificate is issued for the operations specifically described here. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in the certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

1. **Operation:** Unmanned balloon launches for research purposes.
2. **Launch sites:** Listed below or as coordinated with ATC.
Lincoln County Shops -- Genoa, CO (TXC193028), Latitude 39°16'43.8" N., Longitude 103°29'27.6" W.
Limon Softball Fields -- Limon, CO (HGO339026), Latitude 39°14'12" N., Longitude 103°41'46.2" W.
3. **Maximum altitude:** 115,000 feet Mean Sea Level (MSL).
4. Balloon position will be in near real time at www.wxqa.com/cgi-bin/balon1.cgi or www.eoss.org/scgi-bin/balon1.cgi.
5. Balloon launch carrying up to a 27 pound string of experiments. Balloon will burst, then package parachute descent for approximately 45 minutes to the surface.
6. **Times:** 1300 – 2200 UTC or as coordinated with ATC.

WAIVED REGULATIONS BY SECTION AND TITLE

14 CFR 101.33 (b), (c) Operating Limitation; 101.35 (a) (3) Equipment and marking requirements.

STANDARD PROVISIONS

1. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or any State or municipal official charged with the duty of enforcing laws or regulations.
2. The holder of this certificate will be responsible for the strict observance of the terms and provisions contained here.
3. This certificate is nontransferable.

NOTE. - This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 6, inclusive, are set forth on page two.

This certificate is effective on April 1, 2013, 0000 UTC, through December 31, 2013, 2300 UTC, subject to cancellation at any time upon notice by the Administrator or his authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

Western Service Center
(REGION)

2/8/13
(DATE)


Clark Desing
(SIGNATURE)

Manager, Operations Support Group
(TITLE)

EDGE of SPACE SCIENCES, Inc. (EOSS)
SPECIAL PROVISIONS (WSA-1331-BAL)

1. Authority to deviate from the Federal Aviation Regulations (FAR) is limited to specific regulations shown on the Certificate of Waiver. All other applicable FARs must be fully complied with.
2. **You must make the following notifications to concerned facilities as listed below:** NOTE: The notification information listed below is necessary for Air Traffic Control (ATC) to advise known aircraft of the balloon and payload location. It does not alleviate EOSS's responsibility to ensure safety to unknown aircraft, persons or their property.
 - a. **Seven (7) days in advance of the launch:** Contact Denver Air Route Traffic Control Center (ARTCC) Traffic Management Unit (TMU) at (303) 651-4252. Provide your pre-launch notice.
 - b. **Seven (7) days in advance of the launch:** Contact Denver ARTCC Airspace and Procedures Office either by telephone at (303) 651-4532 or fax at (303) 651-4220. Provide your pre-launch notice.
 - c. **Between 12 and 72 hours prior to conducting operations:** Contact the Prescott Automated Flight Service Station (AFSS) at (877) 487-6867 and ask to issue a Notice to Airmen (NOTAM) referencing this waiver.
 - d. **Between 12 and 72 hours prior to launch** contact Denver ARTCC Airspace and Procedures Office, either by telephone at (303) 651-4532 or fax at (303) 651-4220. Provide the most current forecast trajectory.
 - e. **Between 30 and 120 minutes prior to conducting operations:** Call Denver ARTCC at (303) 651-4252 to advise them of the forecast trajectory.
 - f. **Fifteen minutes prior to launch:** Call Denver ARTCC TMU at (303) 651-4252 to ensure the cell phone used at the site is working and able to send and receive phone calls.
 - g. **As requested by Denver ARTCC:** Provide launch information, en route position reports and "on deck" reports. Advise Denver ARTCC when the balloon has burst or when the balloon is being cut down.
 - i. **Prior to issuing the cut down command:** In the event an unplanned early termination of flight occurs, call Denver ARTCC at (303) 651-4252 to coordinate the optimum time for cut down, to avoid possible conflict with high traffic volume and known aircraft.
 - j. **When operations have ended:** Advise Denver ARTCC at (303) 651-4252 when the balloon has landed. Call Prescott AFSS at (877) 487-6867 and ask to cancel the NOTAM.
3. Provide the following information to each facility upon **initial** notification:
 - a. Verify the launch location.
 - b. Time of launch and duration of activity.
 - c. Ascent rate, direction, speed, altitude of operation, package separation information, and estimated impact location.
 - d. Telemetry monitoring capabilities. Position updates via established internet site are required for each descent package (give separate position reports). Verify the website: www.wxqa.com/cgi-bin/balon1.cgi and www.eoss.org/scgi-bin/balon1.cgi.
 - e. Means of establishing contact with launch site (cellular or satellite phone number).
 - f. Capability to advise the FAA when all launched objects have returned to earth.
4. Safety spotters must scan the airspace within 5 miles of the launch site to ascertain the area is clear of aircraft and will remain clear of aircraft during balloon package launch operation.
5. All operations will be conducted in accordance with the holder's safety rules and codes.
6. The holder must be responsible for safeguarding persons and property on the ground and must ensure all persons connected with the operation are familiar with the waiver and the above special provisions.