

New York Wing Conference
Aerospace
Education Display Competition



Standard Operating Procedure
for
Guidelines and Information
(Revision effective 1 October 2015)

IMPORTANT CHANGES TO THE AEROSPACE EDUCATION DISPLAY COMPETITION STANDARD OPERATING PROCEDURE

The most important change has to do with the **Cadet Protection Policy**. Previously, the Policy was in a bit of a flux. As recently as 18 April 2014, NHQ released a new CAPR 52-10 that superseded the Regulation dated 26 December 2012 and stated that it was revised in its entirety. However, on 1 October 2014 they released a newer CAPR 52-10 that superseded the previous one with the usual notation that “Shaded areas identify new or revised material.”

Key features: 1. **Two Deep Leadership**—CAP’s general policy is that every cadet activity **must** be supervised by at least two adult leaders who are in “Approved” status. There are three exceptions to the “two deep leadership” rule. Planning, designing, and building Aerospace Education Displays **is not** one of those exceptions! 2. **Transportation**—when adult leaders drive cadets to, from, or during a CAP activity, there **must** be a **minimum** of three people in the vehicle: two adult leaders and one cadet or one adult leader and two cadets. 3. **Parental Permission**—cadets, who are minors and who desire to attend an activity that takes place at a location other than the unit’s normal meeting facility or the local airport, **must** have written parental authorization on a CAP Form 32.

All Senior Members and Cadets age 18 or older **must** complete the Cadet Protection Program Training Basic Course not-later-than 30 June 2015 or they will not be allowed to participate in CAP activities until they do so. This requirement also applies to personnel who have completed an earlier version of this course. It is recommended that all personnel, 18 and older, check www.capmembers.com occasionally to see if the CAPR 52-10 has been changed again. Please note: *After four years transpire, the course must be re-taken!*

The other important change is that, since the **New York Wing Conference Aerospace Education Display Competition** is clearly a Cadet Activity, it is now run jointly by the Director of Aerospace Education and the Director of Cadet Programs with the assistance of their respective staffs.

Other changes are relatively minor. We tried to be more consistent, always calling this activity a Competition in keeping with the title page and dropping the use of “Contest”. We tried to make the instructions more user-friendly and sometimes moved design elements around to make things more clear to the user. We even found a few spelling errors. We made every effort to remain consistent with the intent of the original author.

We wish to thank George Filgrove, Lt Col, CAP (ret.) for having conceived of this entire concept of an Aerospace Education Display Contest, created the original version of this document, and for having donated the Ruth Nichols trophy.

SUMMARY

The New York Wing Conference Aerospace Education Display Contest is an opportunity for Civil Air Patrol members to share their knowledge of aerospace with others.

Participants present an aerospace topic that they may have a special interest exploring. Topics may include history, notable people, aircraft, space craft, flight procedures, systems, CAP areas of interest, air carriers, general aviation, airports, weather, propulsion, aerodynamics, events aerospace companies, careers, future trends, etc. (See pages 5 & 6)

After conducting research on the topic area of choice, teams prepare a tri-fold background that summarizes the topic. Models, demonstrations, displays, tools, examples or artifacts can be displayed in front of the tri-board. Backgrounds will not be limited to tri-fold boards, but must fit within the allocated space and may not be attached to the host's wall.

Teams/presenters then give a brief 10 to 15 minute talk about their topic. Since the program event generally lasts about two hours, teams may give their presentation several times.

Awards are given for the 1st, 2nd and 3rd place winners. Each individual receives a Certificate of Recognition with the Overall 1st Place Winner qualifying for the Wing's traveling trophy.

GOAL

The Wing Aerospace Education Display Competition is a key element of the Annual New York Wing Conference. The **GOAL** is to design a project to give Civil Air Patrol cadets and senior members a forum to demonstrate and improve their knowledge of aerospace through topic research, development of a project display and presentation of a selected topic.

Cadets who have entered their school's Social Studies Fair or Science Fair may notice a similarity with the Display Competition. The Display Competition has many of the same elements. The primary difference is that *original* research (such as conducting surveys, interviews, experiments, etc.) is not required unless it is specifically part of the project. Think more in terms of writing a research paper or project and then defending it by presenting the information to an audience.

GUIDELINES

Adhere to the following simple rules:

- (1.) Projects are entered as teams representing each New York Wing. Group and may be entered by teams of up to six members -- cadets and senior members. The names of all team members must be on the entry form (see Attachment A). **Presenters WILL be cadets and will be limited to no more than three.**

- (2.) The Display Competition will last approximately two hours with the team given 10 to 15 minutes to make their presentations. If necessary, the team must be prepared to repeat the presentation for the next audience.
- (3.) Judges will evaluate each team display and presentation.
- (4,) Adult **guidance, mentoring and supervision** are required. However, cadets should do the research, construction and demonstration of the display.
- (5.) Project components should meet all criteria shown on the judge's score sheet (Attachment B).
- (6.) Presenters are responsible for setting up the project for display and must remove it at the required time.

AWARDS

Certificates of Recognition (Attachment C) will be given to the participants in the 1st Place, 2nd Place and 3rd Place winning displays. The Overall 1st Place winner also qualifies for presentation of the *Lt. Col. Ruth Nichols, CAP, Memorial Award*, a traveling trophy, (see Attachment D). The traveling trophy is retained by the winning Group until the following year's competition.

SUGGESTED TIMELINE

January – Select Topic; Seek unit commander approval; Start research
February – Continue research; Begin planning and design work
March – Construct displays
March – Submit registration form to Wing
April – Demonstrate project to Squadron and Group commander
May – Aerospace Education Display Contest at the Wing Conference

AEROSPACE EDUCATION TOPIC SUGGESTIONS

The following is a list of potential topics for the aerospace education fair. You may select one of the topics or chose one of your own. Also see *The Aerospace Curriculum* published by NHQ CAP Aerospace Education Division. **You also may choose a topic from any AEX booklet.** Also, the Director of Aerospace Education reserves the right to select a theme for the competition when an appropriate occasion arises.

Flight/Flight Operations

Aircraft Systems
Airspace
Engines
Flight Simulation
High Altitude
Jet Engines

Airport
DUATS
FAA Regulations
Flight Theory
Aerodynamics
Night Flying Theory

Aircraft Instruments
Emergency Procedures
Flight Maneuvers
High Altitude Physiology
Piston Engines

Aircraft/Spacecraft

Airbus A340
Beechcraft Bonanza
Beechcraft T-34
Beechcraft King Air
Bell X-1/X-2
Bell P-59
Boeing 247
Boeing B-10
Boeing B-17/Boeing 307
Boeing B-29
Boeing 707/KC-135
Boeing 727
Boeing 737
Boeing 747
B-1B Lancer

DC-3
DC-9
Cessna 150/152
Cessna 172/T-41
Cessna 182
Cessna A/T-37
Gippsland GA-8
Horton Ho 229
Messerschmitt 163
Messerschmitt 262
North American XB-70
North American P-51
F-16
F/P-80/T-33
Lockheed P-38

Explorer
Vanguard
Mercury
Gemini
Apollo
X-20 Dyna-Soar
X-15
Space Shuttle
Hubble Telescope
Voyager
X-Aircraft
Mars Rover
International Space Station
Orion Spaceplane
Satellites

People in Aviation and Space

Juan Trippe
Howard Hughes
Wright Brothers
Amelia Earhart
Chuck Yeager
Glenn Curtis
Tuskegee Airmen

John Glenn
Sally Ride
Charles Lindbergh
Jimmy Doolittle
Neil Armstrong
Wernher von Braun
WASP

John Travolta
Dick Rutan
Chesley (Sully) Sullenburger
Henry H. Arnold
Frank Borman
Horton Brothers
Frank Whittle

Aerospace Careers

Pilot	Flight Attendant	Mechanic
Air Traffic Control	Avionics Repair	Aerospace Engineer
Astronaut	Teacher	Travel Agent
Logistics (basically a travel agent for freight instead of people)		

Aviation Institutions, Agencies and Organizations

FAA	USAF	Army Aviation
Naval Aviation	Marine Corps Aviation	Air & Space Museum
Blue Angels	Thunderbirds	Snowbirds
EAA	FSS	NASA
AOPA	NTSB	Space Camp
AMARC (Aerospace Maintenance and Regeneration Center)		

Aviation Companies

Pan Am	Eastern Airlines	TWA
BOAC	Aeroflot	General Dynamics
Curtiss Aviation	Northrop	Consolidated
Boeing	Cessna	Piper
Jet Blue		

MISCELLANEOUS

Aviation in World War I	Aviation in World War II	Aviation in Vietnam
Aviation in the Korean War	Alaskan Aviation	Berlin Airlift
Strategic Bombing	Flying Tigers	Disaster Relief
EAA Airshows	Pancake Breakfasts	

Attachment A.

NY Wing Aerospace Education Display Competition Entry Form

(All information must be typed or neatly printed)

Squadron _____ Charter No. _____ Group _____

Team Members (Cadets: presenters, researchers, designers, builders, etc.)

<u>Rank</u>	<u>Name</u>
(1.) _____	_____
(2.) _____	_____
(3.) _____	_____
(4.) _____	_____
(5.) _____	_____
(6.) _____	_____

Mentors and Advisors (must have a minimum of two, IAW CAPR 52-10)

Adult Leader (1.) _____

Adult Leader (2.) _____

Title of Project: _____

Contact information:

Telephone/E-mail: _____

Attachment B.

NY Wing Aerospace Education Display Competition

Judge's Score Sheet

CRITERIA FOR JUDGING

Judge's Name: _____

- Display clearly communicates the nature of the subject
- Display explains what the presenter has learned about the subject
- Display shows creativity/originality
- Accuracy, neatness and craftsmanship
- Has pleasing sensory/visual effect
- Tables, graphs, and/or illustrations are used effectively
- Display of references
- Correct grammar
- Correct spelling
- Correct punctuation

- In-depth investigation of adequate and reliable resources
- Sufficient information upon which to base conclusions
- Relevance (all information is based on project topic)
- Evidence of interpretation and analysis of information related to subject

Oral Presentation:

- Knowledge of content
- Confidence, poise and projection

JUDGES VOTE:

First Choice: Group and Squadron(s) _____
Exhibit Topic _____

Second Choice: Group and Squadron(s) _____
Exhibit Topic _____

Third Choice: Group and Squadron(s) _____
Exhibit Topic _____

Comments:

CIVIL AIR PATROL

UNITED STATES AIR FORCE AUXILIARY



CERTIFICATE OF RECOGNITION

Awarded to

C/MSgt SAMPLE CERTIFICATE
LT THOMAS SELFRIDGE SQUADRON, GRP

*1st Place for Excellence at the Annual New York Wing
Aerospace Education Display Competition*



Awarded this 2nd day of May 2015

Firstname Lastname, Col, CAP

Attachment D.

The Lt. Col. Ruth Rowland Nichols, CAP, Memorial Award



The Lt. Col. Ruth Rowland Nichols, CAP, Memorial Award is a traveling wing trophy that consists of a stainless steel model of the Italian Macchi M.39 that won the 1926 Schneider Cup race at Hampton Roads, Virginia and set a land speed record of 246.9 miles an hour. The symbolism to Colonel Nichols is because she was rated in seaplanes, held numerous aviation records, and broke the sound barrier while flying in a TF-102 Delta Dagger – the first woman to fly this supersonic fighter. THE WINNING GROUP IS ENTRUSTED WITH THE TROPHY FOR ONE YEAR AND THEN RETURNS IT TO WING AT THE NEXT WING CONFERENCE.



Lt. Col. Ruth Rowland Nichols, CAP

1901-1960 -- Known for more than 35 women's aviation records

Ruth Nichols was born in New York City. Her father, a member of the New York Stock Exchange, had been one of Teddy Roosevelt's Rough Riders, and her mother was a strict Quaker.

For her high school graduation, her father presented Ruth Nichols with an opportunity to ride in a plane with Eddie Stinson, ace pilot of World War I. She began secretly studying to fly even as she studied at Wellesley College, planning for a career as a physician. Shortly after her graduation from Wellesley, Ruth Nichols became the first woman in the world to earn an international hydroplane license. In 1927, she was one of the first two women to receive a Department of Commerce transport license. By 1923, she soloed in a seaplane and became the first woman licensed in a flying boat.

Joining Harry Rogers for a flight from New York to Miami in 1927 on New Year's Eve led to public recognition for Ruth Nichols. Fairchild Airplane and Engine Company offered her a sales position, and she tried a number of ventures connected with sports flying.

With the Depression, Ruth Nichols turned to competitive flying, and in 1930 went to work for Crescent Aircraft where the company would allow her to spend most of her time in competitions. She began to make a name for herself as an aviatrix.

In 1931, Ruth Nichols broke three major women's records: altitude, speed and distance. Although she failed in her attempt to cross the Atlantic; injuring her back and even watched her

plane go up in flames the day after breaking the women's distance record with her flight from Oakland, California, to Louisville, Kentucky, Nichols worked to raise funds to replace her plane. In 1932 she also was part of the "good will tour" promoting the International Congress of Women in Chicago for 1933.

Her dream of being the first woman to fly across the Atlantic was shattered when Amelia Earhart achieved that feat in May, 1932. (Years later, she'd join Earhart in founding the Ninety-Nines, an organization promoting women pilots.) Ruth Nichols tried a flight from New York to Los Angeles for another record, but her planned record-breaking flight failed again due to plane failure. She did, however, achieve more notoriety with that flight by using it to drop campaign literature for Herbert Hoover.



Continuing to lecture and to raise funds, as well as to fly as often as possible, in 1935 Ruth Nichols was badly injured in a flaming crash during an emergency landing of a transport plane in Troy, New York.

After this, Ruth Nichols worked to apply her aviation skills to humanitarian projects. In 1939, she founded Relief Wings, a civilian air ambulance service, and by the fall of 1941 had established centers in most states. This project was absorbed into the Civil Air Patrol when the US entered World War II in December 1941.

Ruth Nichols worked as a nurse and flight instructor during the war and piloted a world tour for UNICEF in 1948. Nichols continued to set new records; setting women's speed and altitude records. In 1959, as NASA's Mercury program was preparing for missions to orbit the Earth, she was part of a test group of women -- The Mercury 13 -- who underwent the same isolation, centrifuge, and weightlessness tests that had been devised for the male astronaut candidates.

Lt. Col. Ruth Nichols was the only woman to hold the women's world speed, altitude, and distance records simultaneously for heavy landplanes. She was rated in the dirigible, glider, autogiro, landplane, seaplane, amphibian, monoplanes, biplanes, tri-planes, twin and four engine transports and supersonic jets. Nichols was posthumously inducted into the National Aviation Hall of Fame in 1992. A Hamilton variable pitch propeller from her Lockheed Vega is on permanent display at the National Air and Space Museum's Golden Age of Flight Gallery.