

2023

YEAR END REPORT



ASSOCIATION

OF OLD CROWS

Submitted by:

Shelley Frost

Executive Director

Association of Old Crows (AOC)

The Association of Old Crows (AOC) is an organization for individuals who have common interests in electromagnetic spectrum operations (EMSO), including electromagnetic warfare (EW), cyber electromagnetic activities (CEMA), information operations (IO), signals intelligence (SIGINT) and other information related capabilities. AOC connects members and organizations nationally and internationally across government, defense, industry, and academia to promote the exchange of ideas and information and provides a platform to recognize advances and contributions in these fields.

JOIN THE LEGACY, SHAPE THE FUTURE

INTRODUCTION



ASSOCIATION
OF OLD CROWS

Another successful year at AOC has ended, and we are preparing to celebrate 60 years in 2024. The association has unveiled a new tagline to kick off the celebration: “Join the Legacy, Shape the Future,” which summarizes our dedication to moving the organization into the future while honoring our history.

2023 was spent evaluating AOC’s membership structure and education program. Working with McKinley Advisors, we determined we needed to raise our annual dues and transition to a new membership model, which included introducing a new Partner Program that better serves our corporate interests. Other changes will bring more value to our members while incentivizing AOC education and training courses.

The organization has invested in human resources over the past few years, and our staff is now 18 people strong. In 2023, we hired a full-time Director of Strategic Partnerships and Training and a consultant serving as our Senior Technical Advisor. These additional staff members are instrumental in executing our five-year strategic plan.

We continue to hold steady with a membership of approximately 14,600 EW and EMSO professionals. Individual dues increased on January 1, 2024, and partner rates increased in December 2023 before the Annual Symposium.

This year, our team achieved remarkable milestones. We managed five conferences, a significant increase from only three in 2022, and actively participated in seven chapter events. We have decided to bring AOC Europe in-house starting in 2025, so 2024 will be our last year partnering with Clarion Events. At the Annual Symposium in December, we had a record number of attendees and exhibiting companies, marking an impressive 15% increase from 2022 and an outstanding 47% growth compared to 2021.

We spent much of the year working on moving to a new database and website, including chapter functionality, which will be implemented in March of 2024 – this will give us more information to serve our members better and will give our chapters greater insight to be able to focus on membership renewals.

Our five-year strategy focuses on building an Advocacy and Communications Enterprise. A vital element of this effort is our podcast, From the Crows’ Nest, which continues to outperform other podcasts in our trade space. In 2024, we will launch members-only/subscriber episodes that provide better access for the audience. AOC members and podcast subscribers receive two additional monthly episodes and can participate in the live recording of these episodes.

The AOC Board of Directors and staff continue to evolve and execute our operating plan, strategy, and mission to support the association. We concluded 2023 in a strong, vibrant, and financially solid position, and 2024 will be an exciting and dynamic year.

BOARD ACTIVITIES

2023 AOC Board of Directors

President	Brian Hinkley
Vice-President	Myles Murphy
Secretary	Dennis Monahan
Treasurer	Greg Patschke
International Rep.	Erik Bamford
At Large Directors	Haruko Kawahigashi, Greg Patschke, Mike Ryan, Nino Amoroso, Steve Oatman, and Ken Dworkin
Regional Directors	Central Director – Jim Utt Mid-Atlantic Director – Dennis Monahan Northwestern Director – Mark Schallheim Pacific Director – Amanda Brockermeier International I Director – Erik Bamford International II Director – Jurgen Opfer Southern Director – Karen Brigance Mountain-Western Director – Wayne Shaw Northeast Director – Myles Murphy
Past President	Glenn “Powder” Carlson
Appointed Directors	Ken Parks and Frank “Cowboy” Ball

Annual Election

The annual election was conducted October 1-31, 2023, for the 2024 Board of Directors. Results of the election were:

President-Elect: Tony Lisuzzo

Two (2) At-Large Directors: Scott “Sherm” Oliver and Paul Vavra

International II Director: JP Kim

Northeastern Director: Myles Murphy

Southern Director: Brandon Coleman

Outgoing board members: Greg Patschke, Mike Ryan, Karen Brigance, and Jurgen Opfer

Meetings

The Board of Directors kept busy in 2023, holding five virtual board meetings and two in-person board meetings.

Date	Description
February 16, 2023	Virtual
April 13, 2023	Virtual
June 13-14, 2023	In-Person
August 10, 2023	Virtual
October 12, 2023	Virtual
December 10, 2023	In-Person

Strategic Planning

Myles Murphy, Vice-President, led the strategic planning committee.

The board approved the 2024 Operating Plan (OpMan 14 Appendix A) in December 2023. This operating plan enables board members, committee leads, Executive Director, and staff to have a common understanding of the overall objectives for the coming year.

A summary of the priorities and look ahead can be found at the end of this document. The specific details can be found in OpMan 14 Appendix A online at [crows.org](https://www.crows.org).
<https://www.crows.org/page/governingdocuments>

AOC Governing Documents

AOC's Governing Documents (OpMans) effective dates are shown in the table below. OpMans can be found on the top menu bar (under About) of the AOC home page ([crows.org](https://www.crows.org)) after you have logged in.

<https://www.crows.org/page/governingdocuments>

OPMAN	EFFECTIVE DATE
11 – Purposes and Responsibilities	February 2, 2021
13 – Bylaws of the Association of Old Crows	March 11, 2021
14 – AOC Strategic Positioning	October 24, 2022
15 – Code of Ethics	March 11, 2021
16 – Meeting Minutes	August 31, 2023
17 – Board/Chapter Operations	February 8, 2021
18 – Non-Discrimination Policy	February 16, 2021
21 – Financial Management	February 12, 2020
22 – Reserve Fund Policy	February 11, 2022
23 – Travel and Expense Reimbursement	March 11, 2021
24 – Records Retention	February 2, 2021
25 – Anti-Trust Compliance Policy	May 2, 2022
31 – Awards Program	March 11, 2021
32 – Nominations and Election Committee	March 11, 2021
41 – Conference Planning, Operations, and Reporting	April 26, 2019
42 – Certification Program	November 11, 2021
51 – Conducting Classified Events	February 19, 2021
72 – Annual Chapter Recognition Program	October 31, 2019
73 – Publishing Chapter Events in the JED/eCrow	October 31, 2019
74 – Establishing, Maintaining, and Closing AOC Chapters	May 13, 2022
92 – Human Resource Management	March 11, 2021

2024 AOC Board of Directors

President	Brian Hinkley
President Elect	Tony Lisuzza
Secretary	Dennis Monahan
Treasurer	Jim Utt
International Executive	Erik Bamford
At Large Directors	Haruko Kawahigashi, Nino Amoroso, Steve Oatman, Ken Dworkin, Scott "Sherm" Oliver, and Paul Vavra
Regional Directors	Central Director – Jim Utt Mid-Atlantic Director – Dennis Monahan Northeast Director – Myles Murphy Northwestern Director – Mark Schallheim Pacific Director – Amanda Brockermeier International I Director – Erik Bamford International II Director – JP Kim Southern Director – Brandon Coleman Mountain-Western Director – Wayne Shaw
Past President	Glenn "Powder" Carlson
Appointed Directors	Ken "Kilo" Parks and Frank "Cowboy" Ball

Annual Assembly of Delegates

The meeting of AOC Delegates (chapter representatives) was held in person December 11, 2023, in conjunction with the Chapter Officer meeting at the Annual Symposium. The meeting provided recap of the year by the president. The swearing-in of the 2024 Board of Directors was conducted at the Keynote Session on December 12, 2023



FINANCIAL

The Finance Committee held several meetings throughout the year to closely monitor the finances with a top priority of AOC's Five-Year Strategy.

AOC Reserve Fund Allocation - \$2,446,000

OPMAN 22 mandated contingency (50% of the internal operating budget plus anticipated capital expenses for the next 10 years)

AOC Current Obligations - \$392,475

Chapter Sustainment, 3-Year/Life Membership, Accrued Time Off

AOC Account Balances - \$5,646,532

Schwab (Fixed Income & Equities) - \$4,782,046; Checking - \$864,486

Available "Extra Funding" - \$2,427,057

Account Balances – (Reserve Fund + Operating Obligations) + Net Operating Income

AOC is financially solvent coming out of 2023 and has a stable foundation to start FY 2024.

2022 Financial Audit

The 2022 independent audit report showed a total loss for the year of \$654,229 (investment income and operation revenue from operation expenses) and that current financial operations reflect sound practices. The investment account correction was a loss of \$612,539 reducing revenue from \$3,421,712 to \$2,809,182.

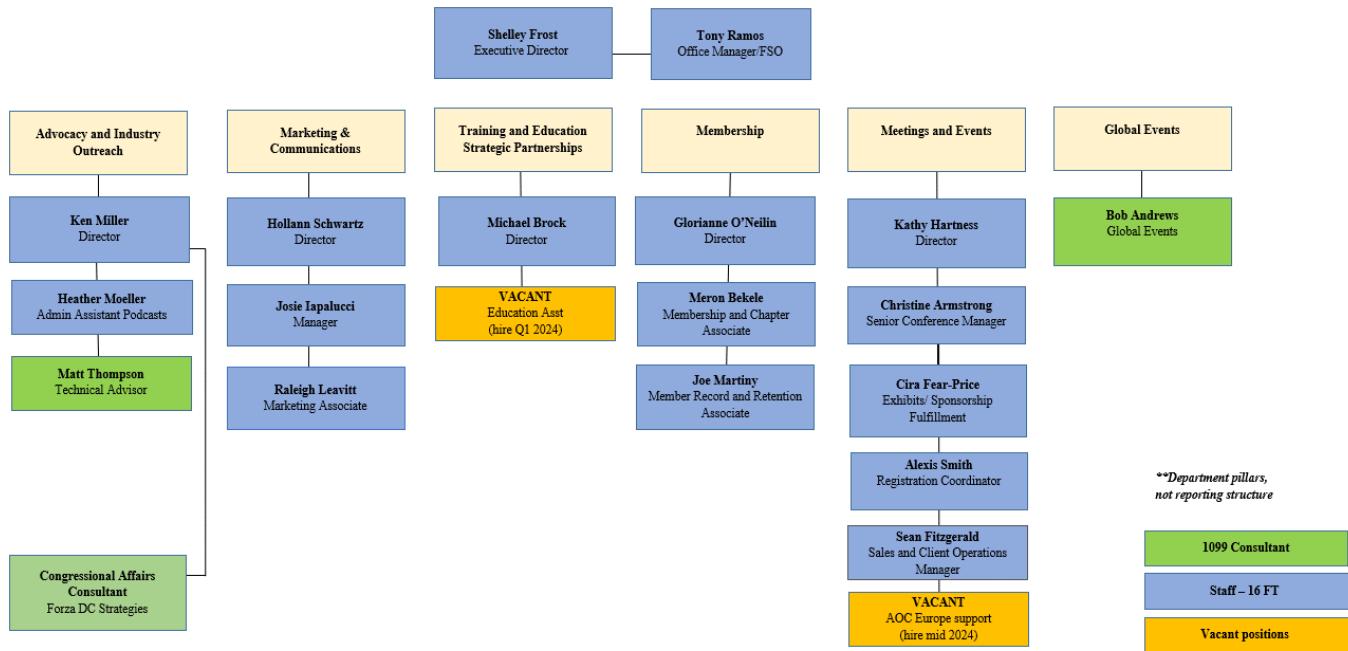
The table below shows audit report income (loss) from operations for years 2016 through 2022. The 2023 audit is scheduled for March 2024.

	2023 projected	2022	2021	2020	2019	2018	2017	2016
Revenue	~\$4,447,082	\$3,388,824	\$4,129,946	\$2,009,909	\$4,375,436	\$3,389,992	\$3,440,150	\$3,102,935
Expenses	~\$4,641,504	\$3,489,176	\$3,122,223	\$2,498,654	\$3,700,666	\$3,498,698	\$2,975,067	\$2,831,748
Income (loss) from operations	~\$194,422	\$654,229 *market correction	\$1,007,723	\$488,745 *COVID	\$674,770	\$108,706 *market correction	\$465,083	\$271,187

OPERATIONS

HQ Staff

As of December 2023, the staff is composed of eighteen (18) employees (16 full-time and two consultants). An organization chart is provided below:



2023 Staff Changes

- Michael Brock, hired in September, Director of Strategic Partnerships and Training
- Matt Thompson, consultant - Senior Technical Advisor
- No Departing employees

Contractor Services

Outside contractor services will continue in 2023 with information technology services by TSI, bookkeeping & accounting by Consultance Accounting Services, and Congressional Affairs Outreach by Forza DC.

Naylor Agreement

AOC has contracts with Naylor Association Solutions to produce the weekly electronic newsletter eCrow and the monthly publication, *Journal of Electromagnetic Dominance (JED)*, on our behalf. The contract for the *JED* expires 2024. We will be renewing the contract.



MEMBERSHIP

Overall individual memberships show a slight increase and a 14% growth of industry membership compared to 2022 (see chart below). The Membership Committee consisted of chairman Jim Utt and Regional Directors Mark Schallheim, Amanda Brockermeier, Erik Bamford, Jurgen Opfer, Karen Brigance, Dennis Monahan, Wayne Shaw, and Myles Murphy.

Individual dues are increasing from \$45 to \$75 in 2024; dues haven't seen an increase in more than 15 years. Current Industry Group Members will be converted to Partners with levels of Supporter (up to 10 individual seats); Advocator (up to 25 individual seats); Collaborator (over 25 individual seats). Additional seats can be purchased for a discounted price. Organizations not interested in the Partner Program (benefits for the company), can buy individual memberships in bulk in our group program. Organizations purchasing a group membership do not receive benefits at the company level.

Membership	Dec 2023	Dec 2022	Dec 2021	Dec 2020	Dec 2019	Dec 2018	Dec 2017
US	11,378	11,439	11,391	11,306	10,849	10,419	10,078
International	3,222	3,022	2,938	2,948	2,901	2,643	2,722
Total	14,600	14,461	14,329	14,254	13,750	13,062	12,800
Industry	254	222	216	226	217	230	221

Chapter Sustainment Initiative Program – Assistance Fund

A chapter assistance fund was initiated in 2015 with funds from a defunct Chapter. Monies may be disbursed to chapters with funding and/or financial needs based on stipulations contained in OpMan 74, Section II, Paragraph H. A history of activity is provided below:

Month/Year	Balance	Note
June 2015	\$79,791	Initial Funding
2015	\$78,291	\$1,500 total disbursements
2016	\$76,291	\$2,000 total disbursements
2017	\$86,840	\$4,250 total disbursements and \$14,688 funding from the closing of two chapters
2018	\$88,853	\$10,549 total disbursements
2019	\$53,378	\$23,599 total disbursements and \$341 funding from the closing of one chapter
2020	\$50,452	\$3,218 total disbursements and \$568 funding from the closing of one chapter
2021	\$47,857	\$1,000 total disbursements and \$1,595 Audit adjustment
2022	\$43,072	\$4,785 total disbursements
2023	\$41,814	\$4,135 total disbursements and \$2,877 funding from the closing of two chapters

Chapters

Northwest Region (5 chapters) – Frozen Crows Chapter, Joint Base Lewis McChord Chapter, Mile High Country Crows Chapter, Pikes Peak Roost Chapter, Whidbey Roost Chapter

Pacific (6 chapters) – Cabrillo Crows Chapter, Diamond Head Chapter, Golden Gate Chapter, Greater LA Chapter, Mugu Crows Chapter, Santa Barbara Chapter

Mountain West (9 chapters) – Cochise Roost Chapter, Billy Mitchell Chapter, Dallas Chapter, Desert Sun Roost Chapter, Fort Worth Chapter, Querque Chapter, Southwestern Chapter, Golden Spike Chapter, Capital of Texas Crows Chapter

Central Region (6 chapters) – Crane Roost Chapter, Gateway Chapter, KittyHawk Chapter, Windy City Chapter, Air Capital Roost Chapter, Ravens Roost Chapter

Northeast (7 chapters) – Empire Chapter, Garden State Chapter, Granite State Chapter, Maple Leaf Chapter, Metropolitan Chapter, Niagara Frontier Chapter, Patriots' Roost Chapter

Mid-Atlantic (8 chapters) – APG Susquehanna Chapter, Capital Club Chapter, Chesapeake Bay Roost Chapter, Dahlgren Chapter, Independence Chapter, Pax River Chapter, Charlie Yankee Roost Chapter

Southern (9 chapters) – Dixie Crow Chapter, Emerald Coast Chapter, Green Jacket Roost Chapter, Gulf Crow's Nest Chapter, Palmetto Roost Chapter, Peachtree Roost Chapter, Barksdale Command Chapter, Redstone Rebel Chapter, Citrus Roost Chapter

International I (14 chapters) – Aardvark's Roost Chapter (South Africa), Arctic Roost Chapter (Norway), Bohemian Roost (Czech Republic), De Ooievaar Chapter (Netherlands), Hussars Roost (Poland), India Chapter (India), Israeli Chapter (Israel), Roma Chapter (Italy), La Fayette Chapter (France), Red Baron Roost Chapter (Germany), Saudi Arabia Chapter (Saudi Arabia), Swiss Crows Chapter (Switzerland), UK Chapter, (United Kingdom), Viking Roost Chapter (Sweden)

International II (8 chapters) – AOC Japan Chapter (Japan), Australian Chapter (Australia), Kiwi Chapter (New Zealand), ROK Roost Chapter (South Korea), Singapore Chapter (Singapore), Taipei Chapter (Taiwan, R.O.C.), Wild Parrots Roost Chapter (Brazil) and Condor Chapter (Chile)

The membership committee is working on the revitalization of Capitol of Texas Chapter, Greater LA Chapter and Aardvarks Roost. They are also working on a new chapter in Lithuania and university clubs are still in the works.

Changes in 2023

New: Poland Chapter
Revitalized: Dallas Chapter and Spacecoast Chapter

2023 Chapter of the Year Winners

Large Category (300+ members)

Chapter of the Year: Dixie Crow Chapter

Medium Category (100-299 members)

Chapter of the Year: Garden State Chapter

Distinguished Chapter Award: APG Susquehanna Chapter, Mugu Chapter, Patriots Roost Chapter, and Windy City Chapter

Outstanding Chapter Award: Billy Mitchell Chapter and Granite State Roost Chapter

Small Category (10-99 members)

Chapter of the Year: Palmetto Roost Chapter

Outstanding Chapter Award: Pikes Peak Roost Chapter

Regional Chapter Greatest Increase Award

Central Region: Windy City Chapter

Mid-Atlantic Region: none

Mountain-Western Region: Querque Crows Chapter

Northeast Region: Maple Leaf Chapter

Northwest Region: Mile High Chapter

Pacific Region: Mugu Crows Chapter

Southern Region: Emerald Coast Chapter

International Region I: Red Baron Roost Chapter

International Region II: Australian Chapter

Overall Greatest Increase Winner: Red Baron Roost Chapter

EVENTS

Conferences

AOC held five in-person conferences in 2023. It is anticipated that AOC will host five conferences again in 2023.

Conference	2023	2022	2021	2020 (Cancelled COVID-19)	2019	2018
Collaborative EW Symposium Point Mugu, CA	Mar 14-16 664 attendees	-	-	-	Mar. 2-4 620 attendees	Mar. 13-15 564 attendees
CEMA, APG, MD	May 2-4 615 attendees	May 3-4 340 attendees	May 25-26 Virtual = 263 In-Person = 223	-	Oct. 8-10 804 attendees	Oct. 23-25 761 attendees
Capability Gaps and Enabling Technologies Crane, IN	May 16-18 221 attendees	May 10-11 168 attendees	-	-	May 14-16 313 attendees	May 8-10 264 attendees
EW/Cyber Convergence Charleston, SC	June 6-8 203 attendees	-	-	-	June 4-6 157 attendees	June 5-7 169 attendees
Modern Threats: SAMs Huntsville, AL	Sept 19-21 356 attendees	Feb. 1-2 112 attendees	-	-	Feb. 5 321 attendees	-
EMS Engineering and Acquisition Dahlgren, VA	-	-	-	-	Sept. 10-11 138 attendees	-
Security Cooperation: EW & FMS GTRI Atlanta, GA	-	-	-	-	Apr. 29-May 1 234 attendees	n/a

Global Conferences

Global Conferences were overseen by Bob Andrews supported by our conference partner Clarion. In 2023, the board elected to not renew the contract with Clarion (ending in 2024) bringing AOC Europe in-house in 2025.

Conference	2023	2022	2021	2020	2019	2018	2017
AOC Europe (Clarion)	May 15-17 Bonn, Germany AOC Share \$487,143	May 10-12 Montpellier, France AOC Share \$309,334	Oct. 11-13 Liverpool, UK AOC Share \$256,670	Canceled (COVID-19)	May 13-15, Stockholm, Sweden AOC Share \$315,118	June 5-7, Lausanne, Switzerland AOC Share \$305,465	June 6-8, London, UK AOC Share \$254,747
AOC Asia (Clarion)			Canceled (COVID-19)	Feb. 4-5, Singapore AOC Share \$25,063	Jan. 29-30, Singapore AOC Share \$18,929	Jan. 16-18, Singapore AOC Share \$28,684	Jan. 17-19, Singapore AOC Share \$13,935

2024 Global Conference Schedule

- AOC Europe (Clarion) – May 13-15, 2024 – Oslo, Norway
- EW Live – September 2024 - possible partnership with Tangent Link
- AOC Asia – possible relaunch in 2025 with the ROK Roost Chapter
- EW GCC (Abu Dhabi) – tentative 2024

Annual Symposium

AOC 2023 | December 11-13, 2023 | Gaylord National Resort & Convention Center

Theme: Advancing EMS Superiority Through Strategic Alliances and Partnerships

2023 set a record number of attendees and exhibitors marking an impressive 15% increase from 2022 and an outstanding 47% growth compared to 2021. The Convention Committee was chaired by Brian Hinkley and was comprised of Erik Bamford, Ken Dworkin, and Dennis Monahan. We were fortunate to have SECNAV Carlos Del Toro, as a keynote speaker on day 2, in addition to other high-ranking speakers throughout the event.

	2023 Gaylord National	2022 D.C. Conv. Center	2021 D.C. Conv. Center	2020 Canceled	2019 D.C. Conv. Center	2018 D.C. Conv. Center
Square Footage Sold	25,600	22,000	17,100	-	17,800	16,300
Exhibiting Companies	174	143	109	-	120	103
Paid Registrants	454	272	246	-	368	325
Full Attendance	2,443	2,160	1,703	-	1,978	1,870

AOC 2023 estimated revenue and expenses are shown in the table below.

	2023 Projections	2022 Actual	2021 Actual	2020 (Cancelled COVID-19)	2019 Actual	2018 Actual
Paid Registrations	~\$318,428	\$261,505	\$210,340	-	\$230,885	\$259,958
Exhibitors (includes room rentals)	~\$1,483,522	\$1,267,798	\$1,028,920	-	\$1,051,117	\$981,643
Sponsors	~\$256,015	\$244,700	\$342,000	-	\$325,450	\$281,381
Show Daily	n/a	n/a	n/a	-	\$3,000	\$9,750
Total Revenue	~\$2,057,965	\$1,774,003	\$1,581,260	-	\$1,610,712	\$1,532,732
Expenses	~\$833,396	\$795,112	\$693,258	-	\$709,271	\$811,428
Net Revenue/Surplus	~\$1,224,568	\$978,891	\$888,002	-	\$903,153	\$721,304

International attendance: approximately 15% (15-20% historically).

Other notable activities hosted at AOC 2023 were:

Community Meeting – The Talent Pipeline proved to be an incredibly lively conversation at the invitation-only roundtable session. It turns out EW/EMSO education, training and STEM are hot topics. We had over 40 attendees from across the International EMSO community, with the three most notable being: Ms. Shelly Frank from DoD CIO, Col Matt “Bandit” Cottrill, the Director of the Joint Electromagnetic Warfare Center, and Air Commodore Blythe Crawford, Commandant of the Air and Space Warfare Centre, UK. The session was moderated by Ken Dworkin and Michael Brock.

AOC 2024 | December 11-13, 2024 | National Harbor, MD | Gaylord National Resort & Convention Center

Host sponsor: L3Harris

PROFESSIONAL DEVELOPMENT

The Professional Development program was temporarily halted for the majority of 2023 as we collaborated with McKinley Advisors to conduct a comprehensive evaluation of all AOC's educational offerings. This decision was prompted by the significant decline in participation in online and in-person courses and the "Certified Specialist in Electromagnetic Warfare" (CSEW) certificate program in 2022.

We will be implementing the findings of the comprehensive evaluation in 2024 including making webinars free for AOC members and charging non-members a small fee (\$25) and partnering with academic institutions for future delivery of the certificate program. Our goal is to maximize the delivery of valuable learning to members and customers while also increasing the bottom line for the association.

The primary source of professional development that AOC strives to offer its members is instructor-led professional development courses, hosted, and administered by AOC. These exist in the form of:

- In-person (AOC facility or customer's facility)
- Virtual (Live)
- Virtual (Recorded)

Course and Webinar History

In-Person/Live	2023	2022	2021	2020	2019	2018	2017	2016	2015
# of Courses	1	2	6	6	11	3	5	7	8
# of Students	20	28	125	267	183	85	51	111	152

On-Demand	2023	2022	2021	2020	2019	2018
# of Students	91	69	123	161	14	4

Webinars	2023	2022	2021	2020	2019	2018	2017	2016	2015
# of Webinars	25	21	25	21	19	12	16	17	18
Attendees	11,410	8,599	4,144	13,527	3,336	3,173	2,389	2,183	2,811
Sponsorship	\$149,000	\$136,000	\$271,175	\$231,500	\$147,374	\$118,982	\$90,625	\$84,750	\$135,375

Live Courses in 2023

Course Name	Location	Instructor	# of Students Live	# of Students On-Demand
Principles of ESM Analysis	Virtual (Adobe Connect)	Sue Robertson	20	1

AOC Webinars

Date	Title	Speaker(s)	Registered
1/19/2023	History of GPS Spoofing 2023 Update	Dana Goward	654
1/26/2023	Alternative Approaches for Enhanced Survivability of Missiles	Eugene Fleeman	348
2/2/2023	Importance of Signal Generator Phase Noise in RF/mm Wave Subsystem Measurements	Sadashiv Phadnis	117
2/9/2023	Regaining the Spectrum Offensive	Bryan Clark	468
2/23/2023	JADC2	Thomas Withington	421
3/2/2023	Chinese Thinking on the Establishment of "Information Dominance"	Dean Cheng	399
3/9/2023	Countering UAS Using EW and DEW Attack Vectors	David C. Stoudt, Ph.D.	581
3/23/2023	SDR For Strategic COMINT Applications	Anders Svensson	456
4/6/2023	EMS as the Context of Military Operations	Jesse Bourque	282
4/13/2023	Coexisting or Clashing: 5G with Radar/Satellite	Raymond Shen	370
5/4/2023	5G Non-Terrestrial Networks (NTN) – Technology Outlook and Evolution	Reiner Stuhlfauth	184
5/18/2023	Multi-Functional Composite for Electromagnetic Shielding	Harry "Rick" Luzetsky	227
6/8/2023	Introduction to Passive Radar	Leander Humbert	580
6/22/2023	Current State – Way Forward – EW Insights	VADM Morley	428
7/6/2023	Electromagnetic Spectrum Conflict in Space - Threats To C4ISR	David Stupples	609
7/20/2023	How IADS and SAMs Work: Metric Accuracy, Transition to Track, and Hand-Offs	Chuck Quintero	780
8/3/2023	Introduction to Cognitive Radar and EW	Joe Guerci	770
8/17/2023	EW in Space	Dave Adamy	607
8/31/2023	Radar Absorbing Materials (RAM): Basic Principles and Technology Trends	Renan Richter	410
9/14/2023	EW/Cyber Technology Assessments by DOT&E: A Process Primer	Tom Curby-Lucier	383
9/28/2023	ITAR and AECA: Understanding and Leveraging International Defense Cooperation	Steven Casazza	222
10/12/2023	Results from Four Years of GNSS Interference Monitoring from Low Earth Orbit	Dr. Todd Humphreys	486
10/26/2023	Principles of ESM Analysis	Dr. Sue Robertson	519
11/9/2023	Small Unmanned Aircraft Systems (sUAS) - Current Uses and Potential	Dr. Dave Thirtyacre	529
11/30/2023	Advances in Microwave Photonics for EW Systems	Dana Goward	580

Career Center

The sales for the career center are outsourced.

	2023	2022	2021	2020	2019
Job Views	122,307	85,623	65,836	111,166	925,159
Job Postings	52	67	91	81	156
Gross Sales (includes pre-orders of posting packages)	\$29,729	\$51,657	\$60,924	\$65,205	\$87,194
Net Revenue to AOC	\$8,048	\$14,345	\$25,528	\$16,095	\$26,347

ADVOCACY AND OUTREACH

Advocacy and Outreach continues to evolve based on the goals of AOC’s five-year strategy, specifically building an advocacy and communications enterprise concept to deliver timely and professional resources and adapt messaging to a diverse and global stakeholder audience across military, government, and industry. This effort is central to AOC meeting growth expectations aligned with other strategic goals, including increasing and diversifying streams of revenue.

The main accomplishments for 2023 were the continued success of AOC’s podcast, *From the Crows’ Nest*, and continued influence on Capitol Hill. For AOC podcasts, listenership increased significantly, and revenue rebounded from 2022 as Naylor took over advertising sales and the show adopted a dynamic advertising model with a unique rapid-fire interview for the mid-roll advertisement. Naylor sold every month from May – Dec 2023, and has already sold out of advertising through all of 2024. Due to FTCN’s growth, we are optimistic heading into 2024 to further increase revenue by adding additional episodes, including a subscription service as an AOC member benefit and special series covering specific topics, such as Test & Measurement.

On the downside, we had to delay new episodes of our sister podcast, the *History of Crows*, due to limited bandwidth. The establishment of the new AOC History Committee was designed to help, but we were only able to release one new *History of Crows* episode in 2023 telling the story of the founding of the AOC, released during AOC’s 60th International Symposium and Convention in December 2023.

2023 Accomplishments/Activities

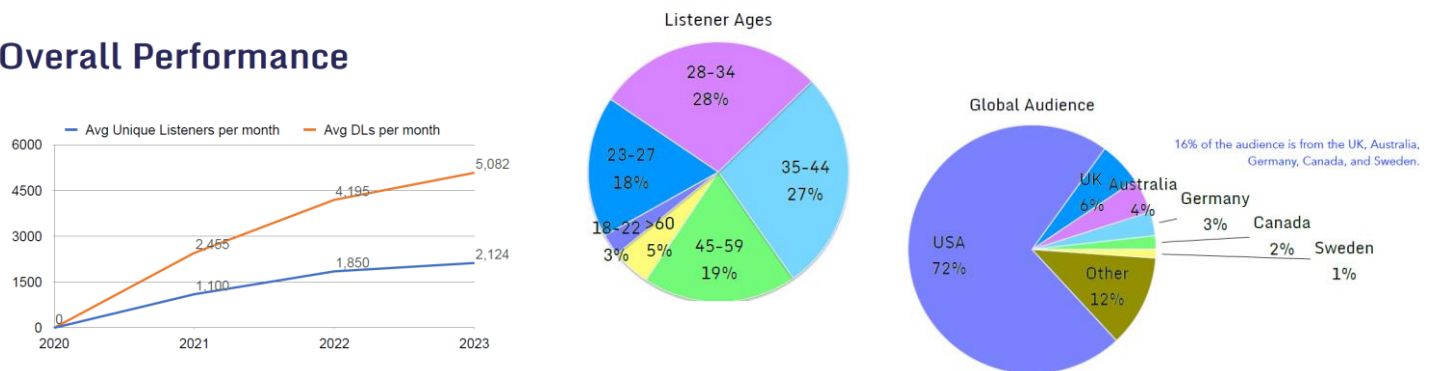
Advocacy and Outreach built on its reoriented program coming out of COVID from 2020-2021 and began aligning efforts to AOC’s five-year strategy. For the program to be successful and to spur success across other departments, AOC must pursue an enterprise approach to advocacy that generates, packages, and distributes knowledge, relationships, and stakeholder value to growing and diverse audiences in the US and abroad. This effort will take several years to implement and fine-tune, but success will help accomplish AOC’s strategic goals, including increasing and diversifying streams of revenue.

The main accomplishments were the continued success of AOC’s two podcasts – *From the Crows’ Nest* and the *History of Crows*. While listenership increased significantly, revenue dropped far below expectations. We had to change the advertising model away from the appearance of industry-sponsored episodes. This transition also led us to seek help from Naylor to help sell advertising. With the right pieces in place, we are optimistic about the revenue potential heading into 2023. Revenue generation aside, AOC podcasts proved to be an adaptable product that helps AOC connect with its diverse members around the world.

From the Crows’ Nest (FTCN) Podcast

FTCN is a regularly scheduled podcast featuring interviews, analysis, and discussions covering leading issues of the day related to EW and EMSO. We produced 26 episodes of FTCN in 2023, and now have officially released 86 episodes (not including special conference and convention episodes) since May 2021. We will reach 100 episodes in Summer 2024. Episodes covering Ukraine, achieving Spectrum Superiority, AECA/ITA policy, the USAF 350th Spectrum Warfare Wing, JADC2, and Directed Energy were the top performing podcasts for the year. The podcast reached a new threshold of more than 100,000 downloads since its inception and regularly receives over 5,000 downloads per month. The FTCN audience reflects AOC’s global membership – 72 percent US and 28 percent international – and receives downloads from 105 different countries. Most importantly, 73 percent of our listeners are under the age of 44 years old. More than a quarter (28 percent) are ages 28-34 years old.

Overall Performance



History of Crows (HOC) Podcast

History of Crows (HOC) Podcast HOC takes you on a journey throughout time and around the world to meet the inventors, the battles, and the technology that has not only shaped military operations - how we fight - but also how we live. HOC covers some of the most important discoveries, battles, and events that shaped what we know today as EMSO. Unfortunately, in 2023, we had to delay new episodes of the HOC podcast, due to limited bandwidth. The establishment of the new AOC History Committee was designed to help, but we were only able to release one new HOC episode in 2023 telling the story of the founding of the AOC. We are currently planning 4 new episodes in 2024, including episodes on the Wild Weasels, the ALQ-99, and the Falkland Islands.

AOC History Committee

In 2023, AOC established the new History Committee to steer the AOC History Initiative. The committee will oversee effort to capture, preserve and share the unique history of EW and EMSO to audiences around the world. The History Committee plans to provide peer review of the HOC podcast scripts, pursue museum partnerships, and identify other deliverables to better tell the AOC story to future generations. In 2023, the Committee began cataloging newly digitized files of recorded interviews and events. It also focused efforts on commemorating AOC's 60th anniversary throughout 2024.

Congressional Outreach

AOC has a consulting relationship with Forza DC, a small government affairs consulting firm to help rebuild AOC's congressional education program coming out of COVID. Throughout 2023, Forza DC was responsible for being AOC's primary interface with the congressional Electromagnetic Warfare Working Group (EWWG). Forza DC kept AOC abreast of developments in the annual defense budget process, as well as managed the transmission of hearing questions through the EWWG to the House Armed Services Committee.

In the Summer, Forza DC assisted in building an EWWG panel discussion co-hosted by the AOC and Hudson Institute. EWWG Co-Chairs and Representatives Rick Larsen, Don Bacon, and Chrissy Houlahan spoke to the live audience in attendance and online for about the evolving role of EMSO in INDOPACOM.

In the fall 2023, Forza helped the Advocacy and Outreach department with the strategy obtain AOC Board of Director approval to begin establishing a Political Action Committee in 2024. They helped develop messaging and FAQs and arrange interviews for potential PAC management consultants.

Finally, Forza worked with the Advocacy and Outreach Department to provide the EWWG revised EMSO language (Section 1682) in the FY 2014 National Defense Authorization Act, passed by Congress in December 2023 and signed into law by President Biden in January 2024.

Another initiative that was planned for 2023 but did not come to fruition was the re-establishment of the AOC Congressional Education Program. We had a series of briefings planned for Fall 2023, including EMSO in the Pacific, an update on the Ukraine War, and Spectrum Availability/Sharing. Unfortunately, due to a dynamic and uncertain congressional schedule due to delays in the budget process, as well as the removal of the Speaker of the House, we were unable to schedule any briefings. We are looking at Spring 2024 to reschedule.

Other Activity Highlights

In addition to the above deliverables, the Advocacy and Outreach department continued select initiatives from prior years, including:

- Increased stakeholder outreach (industry and military) through engagements in San Antonio, TX, and at numerous trade shows and conferences.
- Attended the Directed Energy Professional Society S&T Symposium in April 2023. Discussed future collaboration on an EMSO/DE workshop, possibly focusing on High Power Microwave (HPM).
- Began formal work on the CRADA with NSWC Crane to conduct a multi-year study on EW and Radar Technologies. Work on this study commenced in November 2023 with site visit to San Antonio, TX.
- Monitored Mark-Ups and Hearings in the House/Senate Armed Services Committees and provided analysis of FY 2024 National Defense Authorization Act and available version of FY 2024 Defense Appropriations legislation, which has not been passed by Congress as of the end of the year.
- Conducted regular outreach to AOC Industry Members, including technical subject matter expertise and business development.

2023 AWARDS

PRESTIGE AWARDS	
AOC Gold Medal Recipient	Dr. William "Dollar" Young, Col (USAF, Ret.)
Hal Gershanoff Silver Medal Award Recipient	Christopher Howe, MBE
Col Anton D. Brees Lifetime Service Award Recipients	Son X Nguyen
Joseph W. Kearney Pioneer Award Recipient	Col Christopher A. Fernengel, USSF
AOC Technology Hall of Fame Recipients	Marty Apa and Robert Bunch
John Clifford Award for the Advancement of the Electromagnetic Domain Award	Dr. Joseph C. Deroba
COMMUNITY AWARDS	
Engineering and Technical Excellence Award	Marty Apa
Project Team of the Year Award	The 39 EWS Software Development Team
EW Professional Outstanding Young Crow Award	Alexander Davis and Nicholas Scavello
Professional Outstanding Achievement Award	Dr. Seng Hong
Military Service Award – Air Force	Major Rachel Harris, USAF
Military Service Award – Navy	LT Corey Grey, USN
Military Service Award – Army	CW2 Justin Dugan, USA
Military Service Award – International	Mendy Erad, Col (Ret.) IDF Israel
CHAPTER FLOW-UP AWARDS	
Outstanding Chapter Support	Sam Stello and Jon Ward
Academic and Educational Excellence Award	Dr. Leslie Gruis
Military Individual Excellence Award – Army	Colonel Eric. B. Johnson, USA
Military Individual Excellence Award – Navy	CT11 Daniel R. Bowles, USN and Chief Petty Officer Kevin Fahrer, USN
Military Individual Excellence Award – Army National Guard	Captain Tucker Palmatier, ARNG
Military Unit Excellence Award	479 OSS Electromagnetic Spectrum Operations (EMSO) School
Outstanding Units – Air Force	SSC-SZ Rapid Reaction Branch, Space Domain Awareness and Combat Power Directorate (SSC); 527th Space Aggressor Squadron, Space Delta 11 (STARCOM); and 479th Operations Support Squadron EMSO School, 12th Flying Training Wing (AETC)
Outstanding Unit – Army	USARPAC and 3d Armored Brigade, 4th Infantry Division (3ABCT)
Outstanding Unit – Navy – Shore	Naval Information Warfare Training Group San Diego (NIWTG)
Outstanding Unit – Navy – Air	Fleet Air Reconnaissance Squadron One (VQ-1)
Outstanding Unit – Navy – Surface	USS Fitzgerald (DDG 62)



LOOK AHEAD

The five-year strategy and 2024 Operating Plan were approved by the Board of Directors in December 2023. For the detailed report visit <https://www.crows.org/page/governingdocuments> Appendix A and B.

FIVE YEAR GOALS

It is our mission to educate, connect, and advocate on behalf of members and stakeholders in the global electromagnetic warfare community. With that in mind, these are five strategic goals to become the AOC that we want to become in 2026 and beyond.

1. Grow our global membership commensurate with our market to reach at least 20,000 individual members and 350 industry members by 2026.
2. Build an advocacy and communications enterprise to deliver timely and professional resources and support to stakeholders.
3. Diversify streams of revenue to strengthen our ability to adapt to changing business environment.
4. Strengthen international programs to reflect our global presence by increasing international membership, enhancing membership experience, and developing a plan to improve member engagement.
5. Grow professional development certification and STEM programs in accordance with recently established roadmaps.

2024 GOALS

- MEMBERSHIP EXPANSION
 - Utilize new database and website for HQ and Chapters (Impexium and BillHighway).
 - Implement the new membership model/structures based on the 2023 McKinley Assessment
 - Develop and execute a strategy for membership outreach and retention.
 - Evaluate and Reform Chapter Programs
- ADVOCACY AND COMMUNICATIONS ENTERPRISE
 - Sustain the creation and distribution of original content to complement the JED and other AOC/Naylor products
 - Continue to build the congressional outreach and education program.
 - Establish a Technical Advisory Committee to determine regular technical deliverables for distribution to AOC members, global stakeholders, and other organization conferences, including NATO Subgroup 2.
 - The AOC History Committee to develop and execute history initiatives.
- DIVERSIFY STREAMS OF REVENUE
 - Build on the success of AOC Podcasts – *From the Crows' Nest* (FTCN) and *History of Crows* (HOC)
 - Expand our reach into adjacent markets to grow potential event opportunities (workshops, conferences, etc.)
 - Investigate the feasibility of a monthly or quarterly advocacy report with a subscription model for updates to the defense budget, major policy developments, and market trends.
- INTERNATIONAL EXPANSION
 - increase AOC stakeholder outreach to international chapters and events.
 - Build on the relationship with NATO Subgroup 2.
 - Evaluate staffing and resources to grow international programs.
- EDUCATE
 - Implement the roadmap determined by the 2023 McKinley Assessment
 - Build relationships and partnerships with NDU, Stevens Technical University, USSTRATCOM/JEWC
 - Investigate the NATO training and certification roadmap for EMSO professionals.
 - Develop a comprehensive webinar schedule that provides relevant and valuable content to our members.
 - Determine how to support STEM with chapters and industry.

AOC FOUNDATION



AOC EDUCATION FOUNDATION

2023 AOC Education Foundation Board of Governors

President	Brian Hinkley
Vice President	Myles Murphy
Secretary	Dennis Monahan
Treasurer	Greg Patschke
International Exec	Erik Bamford
Regional Directors	Karen Brigance, Dennis Monahan, Myles Murphy, Jurgen Opfer, Mark Schallheim, Wayne Shaw, Jim Utt, Erik Bamford, and Amanda Brockermeier
Past President	Glenn "Powder" Carlson
Appointed Directors	Jesse Bourque, Mick Riley

Meetings

There were four (4) Board of Governors meetings held in 2023.

Date	Description
Jan 12, 2023	Virtual
June 14, 2023	In-Person
November 2, 2023	Virtual
December 10, 2023	In-Person

Foundation Governing Documents

The Education Foundation Governing Documents can be found on the AOC website after you login under the Foundation tab on the top bar.

Scholarships

2023 Program Highlights

STEM Students of the Year Scholarship - AOC, made possible by a \$25,000 donation from Raytheon, awarded two \$12,500 scholarships; we partnered with an independent group to review the applications and select two winners:

- Carlene Anchordoquy – Norwich University in Northfield, VT
- Max Damewood – University of Illinois at Urbana-Champaign

AOC Chapters gave out approximately \$150,000 in scholarship money in 2023. Between HQ and Chapters, approximately 110 individuals received some form of scholarship from AOC.

AOC Future Five Program

The Future 5 program, created to acknowledge five young professionals under the age of 30 each year. The idea of the Future Five is to honor and encourage some of the best and brightest young leaders in the industry today and give their colleagues and peers something to aspire to. The Future Five will represent young professionals setting the bar remarkably high as they build their careers.

- Winners were recognized at the Annual Convention.
- The winners were:
 - Michael DiMeo, Systems Engineer, L3Harris
 - Scott Dinan, Systems Architect Sr., Lockheed Martin
 - Jarrett Holcomb, Research Engineer, SwRI (Southwest Research Institute)
 - Brittany Joy, RF Electrical Engineer, Motorola Solutions - Applied Technology
 - Noah Wichlacz, Embedded Software Engineer, Northrop Grumman, Mission Systems

Financial Status

The AOC Foundation balance as of December 2023 is \$197,018 which includes the following donations:

- \$25,000 – 2023 Raytheon Scholarships – Raytheon Missiles & Defense
- \$4,778 – 2023 individual contributions

AOC Muddy Watters STEM Program

Vision

Investment and development of our "young" crows through EMS STEM education programs, mentorships, and AOC events encouraging collaboration while ensuring the successful growth of our "EMS Leaders of Tomorrow".

Mission

The Association of Old Crows Education Foundation 501 (c)(3) organization provides a dedicated venue for AOC Chapters to post EMS STEM events fostering open communication and the sharing of ideas through our AOC website, Subject Matter Experts (SMEs) and by hosting global STEM events to include the Annual Convention to promote our chapters, academia, industry, and government.

2023 Program Highlights

- All planned STEM activities for 2023 were put on hold until the completion of the McKinley Advisors review of AOC Educational activities and the hiring of a full-time employee.
- The major efforts for the committee will be to collaborate with AOC Chapters' current and future STEM programs, as well as other STEM efforts by the government and/or industry.
- We are looking forward to reinvigorating the STEM program in the coming year.

2024 AOC Education Foundation Board of Governors

President	Brian Hinkley
President Elect	Tony Lisuzzo
Secretary	Dennis Monahan
Treasurer	Jim Utt
International Executive	Erik Bamford
Regional Directors	Erik Bamford, Amanda Brockermeier, Dennis Monahan, Myles Murphy, Mark Schallheim, Wayne Shaw, Jim Utt, Brandon Coleman, and JP Kim
Past President	Powder Carlson
Appointed Directors	Mick Riley