THE REPEATER

- .... . / .-. . .--. . .- - . .-.

MAY 2018

NEW NAME FOR THE BCECA

INTRODUCING THE AMATEUR RADIO CLUB OF BUTTS COUNTY

348 Patrick Circle
Jenkinsburg, Georgia
30234

770-957-0779
wx4bca@arrl.net

The Butts County Emergency Radio Auxiliary name goes back to the formation of our local club. The name reflected the club's birth driven by the need for an essential emergncy radio service composed of properly licensed and trained amateur radio operators.

At the May meeting of our club the decision to change the name was confirmed by a majority vote. The new name reflects the more encompassing aspects of the hobby. HAM radio activities include contesting for contacts, digital radio modes, several radio bands, computer interfaces, antenna construction to name a few.

The ARES (Amateur Radio Emergency Service) group remains the active emergency service section of the club. ARES certification requires additional training for the Georgia ARES badge. The club however does not require, but encourages, the ARES certification for its members. ARES members provide community communications for emergency services during disasters and especially when the traditional infrastructure is out of service. HAM radio communication is the only existing non-infrastructure dependent mode of communication and has demonstrated an essential role in recent hurricane, fire and earthquake disasters that occurred during the last year.

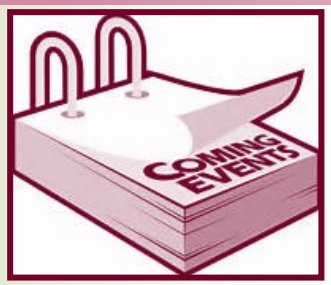
Licensed radio amateurs (HAMS with either a Technician, General or Extra Class FCC certification) and those interested in amateur radio are the primary member base. Many members also participate in the ARES emergency operations and functions.

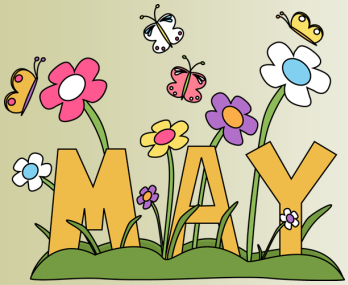
Our name change affirms the club's desire to include members with interest in any or all aspects of amateur radio.

The club provides an environment favorable to mentoring, sharing knowledge, continuing education, the advancement of licensure, and equipment sharing,

The club contains a number of skilled radio operators with a range of knowledge and expertise (AKA "Elmers"). Many consider this environment for HAMS to enrich their skills and understanding of the hobby.

We hope that as a side benefit of the name change we will continue to see the membership and hobby grow.



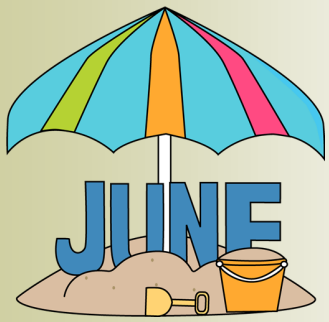


MAY

7 — Monthly Club Meeting ; Exchange Club; ECHO-LINK – John Lipscomb, KA3SME

12 —VE Session (Please note the date change)

18—20 — Hamvention: Xenia, Ohio



JUNE

4-Monthly Training: Field Day Preparation

11 — Declaration of Amateur Radio Week (17—24) by the Butts County Board of Commissioners at 6 PM

16-Tech Saturday: Field Day Logging Review (Station 7)

22-Field Day Set Up – Tim Kersey Pavilion

23—24 Field Day – Tim Kersey Pavilion

JULY

02JUL2018 Monthly Training: Ham Radio 102 – How repeaters work

14JUL2018 *Tech License Class (Station 7)*

21JUL2018 *Tech License Class & VE Session (Station 7)*

AUGUST

02JUL2018 Monthly Training: Ham Radio 102 – How repeaters work

14JUL2018 *Tech License Class (Station 7)*

21JUL2018 *Tech License Class & VE Session (Station 7)*

Hungry Hams meet on the 3rd Saturday at the Lunchbox restaurant in Jackson (07:30)

NOTES FROM THE BACKACRE – K3GWK

Who left the refrigerator door open?

The 2018 edition of the Georgia QSO Party is in the log. I have not seen any other BCECA member scores but I doubt that the LGTS pig trophy will be returning to the K3GWK shack anytime soon. I'm not conceding but it doesn't look good. My final tally was: 12,274 Points, 323 QSOs and 38 Multipliers. Conditions could have been better. I missed the 10 meter band opening but it was still a lot of fun. Several of the contacts I made were with old friends from Pennsylvania and Maryland, even a couple of recognizable calls from FT8 stations I have worked. My daughter Jennifer was in Cincinnati, Ohio that weekend for the induction of Jon Bon Jovi in to the Rock and Roll Hall of Fame and I talked to a Cincinnati ham who was a frequent visitor to the hall and very familiar with Bon Jovi's selection. It's neat to take a break from contesting some for interesting conversation. Paul Newberry, N4PN, has nothing to worry about.

Kutcher's Backacre is all cleaned up; most of the water feature brush has been removed and burned (just made it). It took some outside help this year; I'm not the mountain goat I used to be. OBTW: Thanks for all the birthday wishes, 72 only comes once.

FT8 continues to be the mode of choice here. The new Grid Square Chase month has started so it is back to square one again. I picked a couple more ATNO contacts including confirmation of my QSO with Z66D in the Republic of Kosovo.

Don't forget about our group's nets. There are three, one on Sunday (WL2K Message Test with WX4BCA and WX4GMA) and two on Tuesday. Our FM voice net is held at 19:30 on our VHF repeater. That net is followed by an "on the air" NBEMS training session. I have heard many comments about the need for message and net training; well Tuesday evening is when our digital training takes place. The digital training session is open ended; moving to Tuesday allows plenty of time for practice and troubleshooting. When you check in to the Sunday WL2K Test please use an ICS-213 form. Thanks…

Mark your calendars: Field Day weekend is June 22, 23 and 24 at the Jim Kersey Pavilion. Plans and preparations are well underway even without an overall event coordinator (Bueller, Bueller???) As in the past we will hold our annual family picnic on Saturday evening. Our next Technician class is scheduled for July 14 and 21.

No update on the WX4BCA UHF D-Star repeater's connection to the Internet and the worldwide D-Star network.

ARES ACTIVITY FOR APRIL:

NETS: 8 (26 Ham Hours) – Remember our FM nets have moved to Tuesday at 19:30
Public Service: 0
Drills, Tests and Training: 6 (43 Ham Hours)
Emergency Operations: 0
Miscellaneous: 1 (70 ham Hours) – Blue Bird & Bluegrass Festival
Total Hours: 139 (Value $3,355.00)

ARES* MEMBERSHIP (01/31/2018):

Deployable: 10
Active: 13
Pending: 7 (Need to complete Basic ARES, IS-100, IS-700 and IS-802)
Total: 30

**ARES membership is NOT REQUIRED to participate fully in our radio club's activities.*

That's about it from Jenkinsburg Station. (Weather Underground ID: KGAJENKI2)

Thanks again for all you do for Amateur Radio.

73, Buzz (K3GWK)

Tech Notes

Whit

WHIT'S WISDOM

Whit Smith—WA4VBX

Ampere ratings of wire

There are many factors that contribute to the ampere rating of wire. The use of wire will determine whether it will be bare or with some type of insulation. There are many types of insulation available for wiring. The environment (whether below ground, above ground, or inside a closed container) must be considered in type & size of wire used, the type of conductor, the ambient temperature, bare wire or insulated wire, and many others. For instance, wire outside in air on a cold day can carry more amperage than insulated wire in a hot environment. There are so many variables.

The information in table 1 has been obtained from many sources, and it is intended to be a guide general use. These resistance values are approximate and have been rounded off. They are conservative and should be suitable for general use.
After Vd (voltage drop) & %Vd have been calculated, compare the results to the desired result and determine if it is acceptable or if additional steps need to be taken. Possible changes are a larger wire size or use parallel conductors. As you use these figures, you might decide, that for a particular application, these figures may be changed.

It is impossible to have a situation where the Vd is equal to zero. If you operate your equipment on a 12 volt battery (without a charger attached), the voltage will be about 12.4 volts plus or minus. 13.8 volts - 12.4 volts = 1.4 Vd. (1.4 Vd X 100)/13.8 volts = 10.1 % Vd. Operating on a 12 volt battery will have the most noticeable affect of a little lower output power. Don't forget, the total voltage drop will be from your power supply, and from the wiring that connects the load to the power supply. Once you have determined the Vd you will live with, selecting your equipment is then based primarily on cost. It would be advisable to talk to others and get their perspective. From them, you should get some good pointers. Most people prefer to operate their equipment with a power supply with as low % Vd as practical and economical.

Tech Notes

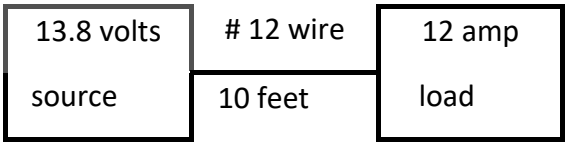
Whit

WHIT'S WISDOM

Whit Smith—WA4VBX

Ampere ratings of wire

Wire size	Amperes	AC Resistance ohms/1000 ft	DC Re-sistance ohms/1000 ft
22	3	16	13
20	5	10.1	12.6
18	7	6.4	8
16	10	4	5
14	15	2.5	3.1
12	20	1.6	2
10	30	1	1.2
8	45	0.63	0.8
6	65	0.4	0.5
4	85	0.25	0.3



Tech Notes

Whit

WHIT'S WISDOM

Whit Smith—WA4VBX

Ampere ratings of wire

Voltage Drop (Vd) = 2(length of wire) (amps)(resistance per 1000 feet)

Vd = 2(10 feet)(12 amps)(2.0 ohms per 1000 feet)

Vd = 0.48 volts

% Vd = Vd (100) / reference voltage

% Vd = (0.48)(100)/ 13.8 volts

% Vd = 3.48 %

If the desired voltage drop is 3 % or less, then use parallel # 12 wire or 1 # 10 wire.

Using parallel # 12 wire

Vd = (2)(10 feet)(12 amps)(2.0 ohms per 1000 feet) / 2 wires = 0.24 Vd

% Vd = (0.24)(100) / 13.8 volts = 1.74 %

Using one # 10 wire

Vd = (2)(10 feet)(12 amps)(1.2 ohms per 1000 feet) = 0.29 Vd

% Vd = (0.29)(100) / 13.8 volts = 2.1 %

REPORTS

As of our most recent meeting, reports will be presented during the meeting.

Reports submitted to the Repeater will still be posted.

Please send reports to NI2Y@arrl.net in advance of the publication of the Repeater.

Net Manager's Report—Ken Wallis, KM4HOS

Ga Hospital Net rpt: The Easter Bunny (that would be Darlene, KK4BKF) left us 3 check-in's on the Ga Hospital Net Sunday. We got a WL, ICS-213 check-in on HF, an HF voice check-in, and a D-Star check-in thru Stone Mtn. Thx to the K4SGH crew for another successful month. If you're interested in bein' a part of this Response Team, pls get in touch with Dan, W4DED, for more information.

BCHD Net rpt: chk'd into all 5 Ga Health Dept Nets this month. Thx to the flexibility of the Health Dept Response Team for making that happen. We have 4 operators now and optimally would like to have 8 so we can provide an operator/logger team familiarized with the station for an 'event'. We test the station every Thurs morning at 0800 - 0900 during the Ga Health Dept Net, so each op/log team would only have to do 1 Thurs each month down at the BCHD w/ a 5th Thurs being a Response Team mtg. If you're interested pls contact Ken, KM4HOS, for more details.

VE Report: Dan Darsey, W4DED , VEC

The May VE Session ended with a new Tech. Congratulations to Dan Edwards of Jenkinsburg.

May Membership Report: Nancy Phillips, K4NEP

We finished 2017 with 39 members. Last week we gained Dana Persells as a new member -- Welcome, Dana! -- and we have 2 Special Members and 1 Life Member, bringing our official headcount to 43. But, dues are due by the end of this month, and we still have 8 who have not yet paid. Dues are $20 per year, with $5 for each additional household member, or $15 for Students.

Please mail your dues to me at: Nancy Phillips, 348 W 2nd St; Jackson, GA 30233.

April meeting Minutes submitted by Darlene Ragon, KK4BPK, BCECA Secretary

Butts County Georgia Emergency Communications Auxiliary

April 02, 2018

Meeting Held at Butts County Fairgrounds Jackson, Georgia

Meeting Began at 1900 Meeting Concluded at 2000
Meeting conducted by Club Vice President; Nancy Phillips

Attendance at Meeting: David Burnham; Michelle Burnham; Mark Clark; Mike Crowe; Buzz Kutcher; Alfred McClure; Melvin Mosier; Dana Persells; Nancy Phillips; Darlene Ragon; David Ridgeway; Anthony Strite; Rudy Williams; Glenn Wyatt.

Office of Homeland Security/CERT: Director Glen Goens No report tonight.

Net Manager's Report: Ken Wallis No report tonight; Ken out of town.

VE Team: Dan Darsey No report tonight.

Repeater/Technical Committee: Mike Crowe No report tonight.

Skywarn Coordinator: Elaine Stachowiak Skywarn class to be offered on Thursday April 24, 2018 from 6-8 pm at the Lamar County EMA/CERT Training center; room 118 on Academy Drive, Barnesville, Ga 30204. Contact Person is: Becky Martin 770-358-5166

Hospital Team and Public Health Department Team: Dan Darsey and Ken Wallis No report tonight.

CERT Activities: David Ridgeway No report tonight.

Field Day Committee:

Membership Chairman: Nancy Phillips

Public Information Officer: Mark Clark

EC Report: Buzz Kutcher See attached report.

Treasurers' Report: John Lipscomb

Club Old Business: Club membership dues are due now; see John Lipscomb to pay your dues.

Club New Business: There is discussion of holding a Technicians License Class in July.

Coming Events: 2018 Jackson Football Alumni 5K Run on May 5, 2018 at 0700.
Bluebird Bluegrass Festival is on April 21, 2018.
May training program will be on Echolink presented by club member John Lipscomb.

Monthly Program: Our program and demonstration tonight was on Software Defined Radio given by Greg Mann, KM4RKT.

Raffle Funds Raised this Meeting:

Darlene Ragon, KK4BKF, Secretary ARCBC

BUTTS COUNTY AMATEUR COMMUNICATIONS AUXILIARY

Visit our website: www.bcgaares.org

Butts County Emergency Communications Auxiliary

348 Patrick Circle
Jenkinsburg, Georgia
30234
770-957-0779
wx4bca@arrl.net

Net Control Station Roster

If you'd like to serve as NCS, please email Ken (KM4HOS), Net Manager:

kawallis@charter.net

President
Elaine Stachowiak KW4AQ
ubudogems@hotmail.com

Vice-president
Nancy Phillips K4NEP
topazmeadows@yahoo.com

Secretary
Darlene Ragon KK4BKF
lragon@aol.com

Treasurer
John Lipscomb IV KA3SME
john.lipscomb@delta.com

Public Information Officer
Mark Clark NI2Y
NI2Y@arrl.net

Club Photographer
J.D. Van Sickle KM4DHS
jvan12@charter.net

Emergency Coordinator / E.C.
Buzz Kutcher K3GWK
k3gwk@arrl.net

A.E.C. / V.E. Team Admin.
Dan Darsey W4DED
w4ded@arrl.com

A.E.C. / CERT Team Liaison
David Ridgeway
KK4SUO
dpridgeway@
bellsouth.net

A.E.C. / Sheriff's Dept. Liaison / PIO
Mark Clark NI2Y
NI2Y@arrl.net

A.E.C.
David Burnham

Weekly Training Net:

FM Tuesday 7:30 PM

https://www.facebook.com/groups/BCECA/

Butts Co Em Comm Aux

NEW REPEATER

The Griffin VHF D-Star repeater is operating from the Spalding Hospital as a stand-alone machine (just like our UHF repeater). It uses 145.480- MHz. The Spalding club has asked that we try it.

Nets

Recommended training nets for Butts Co operators

Sunday

Metro ARES FM Net - 1st Sunday **ONLY** at **1600L,**
WA4ASI repeater, Covington, 146.925 -, 88.5 PL
KK4GQ repeater, Fayetteville, 145.210 -, 131.8 PL .
KC4AQS repeater, Paulding Co, 145.805 +, 100.0 PL

Ga ARES/BCECA WL Express Net - Send an ICS-213 to WX4GMA and WX4BCA **by 2200Z.** (1700L EST, winter/1800L EDT, summer) Include a weekly Digital Activity Report for the previous week (Sun-Sat). Please use a Winlink RF gateway; Winmor, packet, if capable; otherwise use Telnet.

GA ARES Digital Nets - 2100Z (1600 EST, winter/1700 EDT, summer), **3.583** MHz **USB**.
Ga ARES **PSK 'Traffic'** Net - send an ICS-213 to WX4GMA NCS, ctr on **1500** Hz.
Ga ARES **PSK 'check-in'** Net - **even** numbered months, center on **1000** Hz, 'text' check-ins only and will run concurrently w/ the PSK 'Traffic' net.
Ga ARES **D-Rats** Net - **2130Z** (1630 EST/ 1730 EDT), **odd** months, port: gaares.ratflector.com.

GA Section HF Net - 2200Z (1700 EST/1800 EDT), **3.975** MHz **LSB**., voice, by callsign prefix.

SE Weather Net - 2100L, D-Rats/D-Star, on sewx.ratflector.com. D-STAR voice on REF004A

Tuesday

Butts County Emergency Communication Training Net - 1930L, **WX4BCA** repeater, 147.285 MHz, + offset, 131.8 PL, begins with voice check-ins followed by an NBEMS Digital Net. WL Express message accepted if not sent the previous Sunday, send to WX4BCA w/ digital activity rpt.

Wednesday

SE Metro Digital Net - 2100L, **WA4ASI** repeater 146.925- & 444.800-, 88.5 PL. MT63-2KL, center 1500 Hz WL - ICS-213 to K4NCR, D-Rats on gaares.ratflector.com

Thursday

NCRC/ARES/RACES FM Net - 2000L, **WA4ASI** repeater, 146.925- & 444.800-, 88.5 PL. WL - K4NCR.

*** for numerous other training opportunities, see the **BCECA Yahoo group** website, and/or the **Ga ARES** website for other Nets w/ days, times, frequencies, protocols, etc. for your training convenience.

QRM – Miscellaneous Ramblings

Wellstar – Sylvan Grove Station

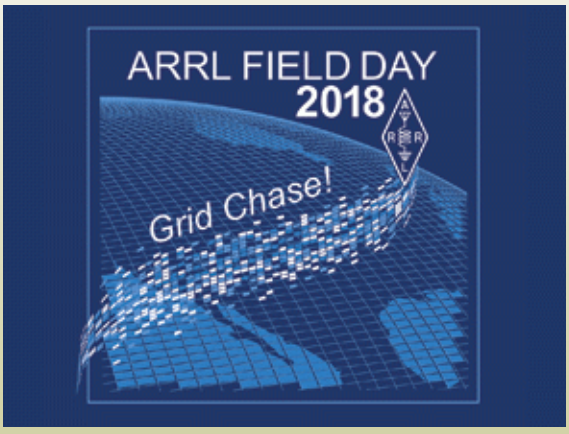
Relocation and Update

4th Annual Jackson Football Alumni

5k

May 5, 2018 8:00 AM

REMINDER : 2018 ARRL Field Day is June 23-24

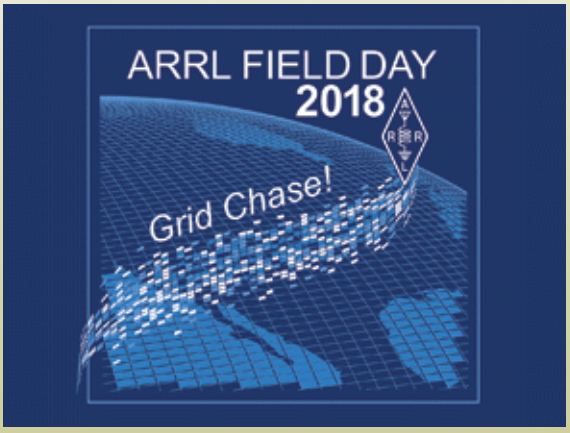


QRM – Miscellaneous Ramblings

4th Annual Jackson Football Alumni
5k
May 5, 2018 8:00 AM

WELLSTAR – SG STATION RELOCATION AND UPDATE

* 2018 ARRL Field Day is June 23-24 *



QRM – QUESTIONS YOU MIGHT NOT HAVE ASKED

Interaction between Stainless Steel and Aluminum?

Several people have touched on the subject of dissimilar metal or galvanic corrosion. The subject can be extremely complicated, but there are several good generalities that can be used as a guide when picking compatible metals. First - you need a chart or table of the galvanic series. You really need one that lists the alloys you are contemplating using. Just saying aluminum or stainless is not enough if you really want good results. Different alloys behave quite differently. Understand how the tables work too (see below.) Two of the better tables I have found are listed below.

Second - pick compatible metals based on how close they are in the galvanic series. The closer the galvanic potentials are, the less corrosion that will occur. Third - the amount of corrosion is proportional to the ratio of cathode to anode area ratio. This leads to a number of methods to minimize corrosion. Make the anodic metal piece much larger than the cathodic one. The corrosion will be spread out over a larger piece of metal and thus the loss of some atoms from the surface will likely not result in much weakening. If you have to use a different metal as a fastener, use one more cathodic than the metal in which it is to be used. Fourth - remember that sometimes the above rules must be bent a little for other reasons, and that corrosion can be far more complex than just galvanic corrosion. Look at the stainless steels for example. Most can be both cathodic and anodic to themselves! Corrosion while immersed in sea water can be quite different than corrosion from exposure to pollutants in the atmosphere.

So before presenting the table, let's look at the original question - stainless fasteners on aluminum. First we need to know what alloy of aluminum and stainless we are talking about. With no other information all we can do is note that aluminum is generally more anodic than any of the stainless steels. This is good from the standpoint of having a small fastener. But note that zinc or cadmium plating is likely better as they are closer to aluminum in the galvanic series. I would probably pick a hot-dip galvanized screw over a cadmium plated one because of the thicker coating, but I would pick a cadmium plated one over a simple zinc plated one (which is likely to be a rather thin plating). But I would certainly not pick brass, copper, or bronze.

This brings up the point of why I listed two tables. The shorter one gives a better idea of how far apart the metals tend to be in the series. The longer list gives many alloys, but if you view

these with their electromotive potentials (not shown), you will find many alloy series differ little in their actual placement in the series. Thus with aluminum, you might notice little difference between the corrosion with either 304 or 17-7PH stainless steel.

Corrosion can be a nearly exact science if everything you work with is exceptionally pure. But in the real world, this is not the case and an experienced metallurgist is a wonderful friend to have. I first learned this in a corrosion class, but it really sank home after I learned it by experience too.

[And on one or two occasions, I have seen my metallurgist friend scratch his head in confusion too!]

When your choice of materials is limited, sometimes you have to accept that some corrosion is inevitable and design accordingly.

QUESTIONS YOU MIGHT NOT HAVE ASKED

Table 1 Galvanic Series of Certain Metals & Alloys Arranged in Order of Corrosivity:

ANODIC (Least Noble)
End Material
Magnesium
Magnesium alloys
Zinc
Aluminum 25
Cadmium
Aluminum 17ST
Steel or iron
Cast iron
Chromium-iron (active)
Ni-Resist
18-8 Chromium-nickel-iron
18-8-3 Chromium-nickel-molybdenum-iron (active)
Lead-tin solders
Lead
Tin
Nickel (active)
Inconel (active)
Hastelloy C (active)
Brasses
Copper
Bronzes
Copper-nickel alloys
Monel
Nickel (passive)
Inconel (passive)
Chromium-iron (passive)
18-8 Chromium-nickel iron (passive)
18-8-3 Chromium-nickel-molybdenum-iron (passive)
Hastelloy C (passive)
Silver

Second Table from MIL-STD-889:

Active (Anodic) End

Magnesium
Mg alloy AZ-31B
Mg alloy HK-31A
Zinc (hot-dip, die cast, or plated)
Beryllium (hot pressed)
Al 7072 clad on 7075
Al 2014-T3
Al 1160-H14
Al 7079-T6
Cadmium (plated)
Uranium
Al 218 (die cast)
Al 5052-0
Al 5052-H12
Al 5456-0, H353
Al 5052-H32
Al 1100-0

Al 3003-H25
Al 6061-T6
Al A360 (die cast)
Al 7075-T6
Al 6061-0
Indium
Al 2014-0
Al 2024-T4

Tin (plated)
Stainless steel 430 (active)
Lead
Steel 1010
Iron (cast)
Copper (plated, cast, or wrought)
Nickel (plated)
Chromium (Plated)
Tantalum
AM350 (active)

Stainless steel 310 (active)
Stainless steel 301 (active)
Stainless steel 304 (active)
Stainless steel 430 (active)
Stainless steel 410 (active)
Stainless steel 17-7PH (active)
Tungsten
Niobium (columbium) 1% Zr
Brass, Yellow, 268
Uranium 8% Mo.
Brass, Naval, 464

Yellow Brass

Brass (plated)
Nickel-silver (18% Ni)
Stainless steel 316L (active)
Bronze 220
Copper 110
Red Brass

Stainless steel 347 (active)
Molybdenum, Commercial pure
Copper-nickel 715
Admiralty brass
Stainless steel 202 (active)
Bronze, Phosphor 534 (B-1)
Monel 400
Stainless steel 201 (active)
Carpenter 20 (active)
Stainless steel 321 (active)
Stainless steel 316 (active)
Stainless steel 309 (active)
Stainless steel 17-7PH (passive)
Silicone Bronze 655
Stainless steel 304 (passive)
Stainless steel 301 (passive)
Stainless steel 321 (passive)

QUESTIONS YOU MIGHT NOT HAVE ASKED

Second Table from MIL-STD-889:

Active (Anodic) End

Stainless steel 201 (passive)
Stainless steel 286 (passive)
Stainless steel 316L (passive)
AM355 (active)
Stainless steel 202 (passive)
Carpenter 20 (passive)
AM355 (passive)
A286 (passive)

Titanium 5A1, 2.5 Sn
Titanium 13V, 11Cr, 3Al (annealed)
Titanium 6Al, 4V (solution treat-
Titanium 6Al, 4V (anneal)
Titanium 8Mn
Titanium 13V, 11Cr 3Al (solution heat treated and aged)
Titanium 75A
AM350 (passive)
Silver
Gold
Graphite

Passive (Cathodic) End

Author Contact Information

Article posted October 17, 1999 by Barry L. Ornitz: WA4VZQ@arrl.net.