Merry Christmas 2019 from the ISA Birmingham Executive Committee!!!!!!!!!!!
May you have the happiest and best New Year ever in 2020.

The ISA Birmingham Section invites you to participate in our programs, training class, and plant visit this coming year. ISA wants to be of assistance to you as you improve your ability to perform your job and as you advance in your professional development. Take advantage of the opportunities to learn from our technology exchange, expand your leadership ability, develop new skill sets, and enhance advancement possibilities in your employment.

Next ISA Birmingham Section Meeting: Tuesday, January 14, 2020, (Details to follow – please mark your calendar)

ISA Birmingham Section Christmas Party

The laughter was loud, the food was excellent, fun was booming, and the fellowship outstanding at the ISA Birmingham Christmas party on Tuesday, December 10, 2019. A good group of section members and guests gathered in the home of John and Heather Cover for a time of renewing old friendships and making new ones, as they celebrated the Christmas season in a merry fashion.
The discussion topics were too numerous to mention and if someone wasn’t there, they may have been talked about. Even though the weather was not the best, the attendees took part in festive conversation and a little game of Catch Phrase to test the mental alertness. It was a great night and the Covers were excellent hosts to offer their home for the gathering.

2020 Short Course 50th Anniversary

The ISA Birmingham Section is proud to present the 50th Annual “Fundamentals of Industrial Automation, Instrumentation, and Control” training class. This popular and successful event will take place on May 5 – 7, 2020, in the offices of Revere Control Systems in Hoover.

The instructors for the classes will again come from our own area and are experienced control system practitioners with years of background and knowledge. The registration fee before March 1, 2020, is $795.00, with another $100.00 discount available for ISA members. After this date, the fee is a very reasonable $895.00, for a valuable three day course led by industry subject matter experts.

Please use the link below to register for the class and to obtain additional information on logistics, housing, schedule, instructors, etc.

https://www.isa.org/events-conferences/events-calendar/event-details/?productId=66931208

Brochures, schedules, and additional information may also be obtained by contacting Gerald Wilbanks at gwilbankspe@charter.net or by phone at (205) 566-9801.

Mark Your Calendar:

➢ ISA Birmingham Section Technical Meeting: Tuesday, January 14, 2020, 4:00 PM, W. G. Yates Company, Topic TBD.
➢ Engineering Council of Birmingham Dinner: February 20, 2020
Harbert Center – Birmingham, AL

➢ 50th Annual Short Course: May 5 – 7, 2020
Revere Control Systems
Birmingham, AL
https://www.isa.org/events-conferences/events-calendar/event-details/?productId=66931208

➢ Honors and Awards Dinner: Tuesday, May 12, 2020
Recognition of the award recipients for 2019, presentation of all former ISA Birmingham Section Presidents, and introduction of the officers for 2020 – 2021.

Anyone with suggestions as to program topics and presentations, should contact Mark Isbell at misbell@wgyates.com, with ideas and suggestions.
ISA Birmingham Leaders 2019 – 2020

Visit the ISA Birmingham web site:
www.isa.org/birmingham

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- Grady Andrews – Hile Controls of Alabama (gandrews@hilealabama.com)
- Cliff Fleming – Control Equipment Company (cfleming@eadsdistribution.com)
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**Matt’s – Word for the Day**

**Eschew**

Part of speech: *verb*

Origin: *Late Middle English, 14th century*

1. To avoid as a point of habit
2. To shun or abstain from something for moral reasons

Examples of *Eschew* in a sentence

"She eschews alcohol and drugs in favor of a healthy, low-key lifestyle."

"Many religious figures in history have eschewed basic comforts to get closer to the noble truths they pursue."

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**Technical Brain Teaser**
An orifice plate is to be used to measure the flow of water in a 4 inch, schedule 40 line. The flow rate is specified as 0 – 200 GPM at a pressure of 75 psia and a temperature of 125 degrees F. If a differential pressure of 100 inches of water is used for the primary element, the orifice bore will most nearly equal to:

a. 3.5 inches  
b. 1.4 inches  
c. 2.3 inches  
d. 0.9 inches

Answer

One method of solution without using a computer, is to employ an equation from the Cameron Hydraulic Handbook. This has been modified below and broken up into two relevant parts to use to find the orifice bore directly. The Q value is 200 GPM and the expansion coefficient, Fa, is 1.0, with a temperature of 125 degrees F. The inside pipe diameter, D, is 4.026 for a 4 inch schedule 40 pipe. The coefficient, C, for a sharp edged orifice, is .61, for use in this equation. One key value here is the pressure differential, h, which is 100 inches of water, but must be expressed in feet of flowing liquid in this equation. Therefore, you must calculate the value as 8.33 feet of water and the specific gravity will be approximately 1.0, so the value of h is equal to 8.33 feet of water.

Also, please note that the general limitation for the Beta Ratio (d/D) is .25 to .75. If this rule is applied, you may eliminate answers “a” and “d”, because the values of .9 and 3.5 fall outside the stated Beta Ratio limits.
\[ K = \frac{Q^2}{[(19.636)(Fa)(C)]^2h} \quad d = \sqrt{\frac{K}{1 + \frac{K}{D^2}}} \]

\[ K = \frac{(200)^2}{[19.636(1.0)(.61)]^2} (8.33 \text{ ft}) \]

\[ K = \frac{40,000}{143.5 (8.33)} = 33.5 \]

\[ . \therefore d = \sqrt{\frac{33.5}{1 + \frac{33.5}{(4.026)^2}}} \]

\[ d = 2.33'' \]

Answer is **C** 2.33