



SPEED'S NEWS



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 CHAPTER 54 MEETING: MONDAY, NOVEMBER 12, 1984 7:30 p.m. SANBORN AVIATION

Dear Chapter 54 Members and Friends:

As you can tell from the above, Jim Olson is our new president. He has been in this chapter for about 12 years, seen a lot of its ups and downs, and has some very good ideas of his own. I won't elaborate on that here, since the meeting is the place for him to tell you what's on his mind. Therefore, take special note of the meeting time and place, and BE THERE!

Also at this months meeting, Designee Al Amsden will be giving out information on the hazards of winter flying. And wait 'til you see what's coming up at the rest of the meetings!

CALENDARS: Yes, they're here! You can pick them up at the meeting. Or, we have another plan: for five (\$5.) dollars, Rosemary Frank will mail one to you, and that price even includes the postage! If you pick yours up at the meeting, a small sum of \$4.00 will buy you one. Write to: Rosemary Frank,
 612 Eighth Ave. S.
 S. St. Paul, MN 55075

OCTOBER MEETING: In addition to the elections, we had a fine program. Roger Westerberg gave an excellent presentation on the techniques of fiberglassing, using illustrations and relating them to his own Cassutt project. Thanks, Roger. The Oshkosh movies were most welcome, and an additional cassette on aerobic flying had everyone wide awake!

Please take note of the enclosed list. If you have any contacts at any of these places, please let Jim Olson know so that we can set up some of these projects in the near future. Thanks.

You may already be receiving your subscription to Aero-Mart magazine. This is one of the most recent projects your chapter has completed. Members who are current, i.e. dues paid, are receiving a complimentary subscription to the magazine.

Eleanor

NEW FREE LITERATURE

COUPLINGS

A new bulletin from Aeroquip Corporation describes three standard latch styles of high strength but lightweight Marman V Band couplings. These couplings make assembling all types of tubes, pipes, ducts and containers fast and simple. For a copy of bulletin AEB-258, contact Aeroquip Corp., Aerospace Division Advertising Department, 300 South East Ave., Jackson, MI 49203, or write No. 301.

PARKING LOT LIGHTING

An eight page brochure of lighting requirements for covered parking garages is available from Manville's Holophane Division. Details on safety, security, comfort and



energy efficiency are included, as well as a one page guide on luminaires for driving lanes, parking stalls, entrance areas, walkways and parking decks. For a copy of bro-

chure HL-796, write Manville Service Center, 1601 23rd Street, Denver, CO 80216, or write No. 327.

ASPHALT DRAINAGE

The Asphalt Institute is offering a new publication on "Drainage of Asphalt Pavement Structures." Fully illustrated, brochure MS-15 is designed for those involved in the design and construction of drainage systems for all types of asphalt pavements, including runways and parking areas. For a copy, contact the Asphalt Institute, Asphalt Institute Building, College Park, MD 20740, or write No. 328.

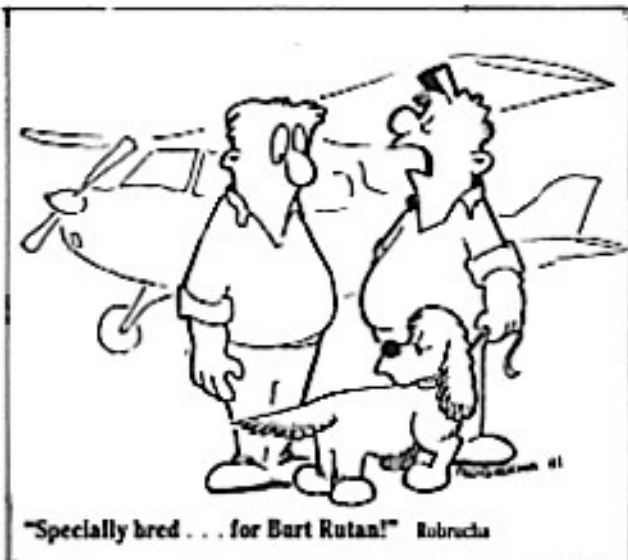
AVIONICS INVESTMENTS

A free tax advice booklet containing facts, ideas, and examples of ways to justify an investment in new avionics is available from the King Radio Corporation. "The Avionics Investment Guide" will help you determine the bottomline cost in today's tax and financial environment. For a copy, contact King Radio Corp., 400 North Rogers Rd., Olath, KS 66062, or write No. 302.

INFRARED HEATING

A 24-page design guide from Solarwax is available to help you determine infrared heating requirements for buildings. With infrared heating, you can possibly save from 30 to 50% over standard warm-air heating costs. For a free copy of the "Total Building Heat Design Guide," contact Solarwax Inc., P.O. Box 217, Rochester, MI 48063, or write No. 303.

AIRPORT SERVICES MANAGEMENT October 1984



Microwave Landing System is so-called because it works in the 5 GHz microwave band, as opposed to the VHF band used by ILS. This immediately creates several advantages:

- At these frequencies, the narrow beam is much less susceptible to multipath, which makes ILS useless close to mountains, and in areas of bed snow or rain. Multipath often degrades the signal even in less severe terrain and weather conditions, and it requires flat ground in front of ILS antennas.
- There are 200 channels available in this band, compared with the 40 channels available for ILS.
- The signal is smoother, and gives the pilot a quicker indication if he digresses from his approach path.
- The antennas are much smaller and can be adjusted electronically, so installation and commissioning are easier.
- The high accuracy means that all MLS will be built to the ICAO Category III standard.

Both MLS and ILS have separate elevation and azimuth guidance systems. An ILS azimuth system (localiser) works by transmitting a pair of elongated beams along the approach path. Their intersection marks the correct approach; as the aircraft moves to one side, one signal becomes stronger while the other becomes weaker.

When combined with the elevation system (glide-slope), which works in a similar manner, the ILS provides a single approach path at a fixed descent angle—normally 3°.

How MLS Works

An MLS azimuth system comprises a microwave beam which scans from side to side over a range which is normally 40° to either side of the runway centreline. The elevation unit scans over an elevation range from 0° to 20°. The result is a large "cone" in which the aircraft's precise position can be calculated by timing reception of the pulses.

With ILS, there is no continuous indication of distance to go to the runway—instead, marker beacons placed at a range of 4 miles and 0.5 miles activate an alert in the cockpit. MLS installations normally will have continuous distance information provided by Precision Distance Measuring Equipment (P-DME).

The greater volume of coverage and the distance information gives MLS the potential to provide precise guidance for approaches which are not straight. Initially, segmented approaches will be introduced whereby aircraft are brought into alignment with the runway by a series of steps. Ultimately, a continuously curving approach will be possible.

MLS is much better at guiding aircraft which have overshoot the runway. The ILS back beam is narrow and can give only azimuth information. An MLS can provide precise position and altitude guidance within its "cone".

The pulses from MLS transmitters could be used to transmit weather and air-pressure data and runway availability to the pilot. They could also inform the receiver of the exact position of the MLS transmitters.