THE REST OF THE NICOPRESS STORY

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The last Association news letter had a poignant article about nico-press sleeves and aircraft cables which often fail at these attachment points. The cautions were valid, but not stressed nearly enough.

Nico press is not a public specification, nor is it an aircraft specification. The nicopress process was invented by the National Telephone Supply Company in the 1930's for installing guy wires and other mundane rigging installations related to poles and guy wires.

For some aircraft applications in the 30's and 40's, the nicopress sleeve was adopted- but not universally. It is approved on the Luscombe for use in the aileron actuator cables at the stick, where a swaged fitting is unacceptable. The widespread use of nicopress fittings in homebuilt aircraft has led to the assumption that it is a suitable or even good product for aircraft cables. Generally speaking it is not, and the in-service failure rate of these connections is relatively high. (and as Gerry pointed out, you only need one cable failure to ruin your day) A go no-go gauge can help one gauge a properly formed nicopress fitting, however it does not guarantee that a good mate and grip is had, and some meeting the standard, still fail the pull test.

Certified aircraft have cable certification standards which cannot be met and controlled by field prepared nicopress fittings. For this reason alone, one should not consider home-installing them for a certified airplane, in any of the control system.

For example: All certified airplanes after about 1939 require the use of primary cables that are at least 1/8" in diameter, and use flexible (7 X 19) cable with a minimum pull test strength of 2000#. (Operational loads are never anticipated to exceed 600# in the Luscombe controls- if they did, the control surface would fail at the attachments)

Moreover, completed cable assemblies in certified aircraft are required to be tested prior to sale or installation. That test load or proof requires that the cable be pulled from the attachment pin, eye, or other fitting to at least 60% of ultimate cable load, or at least 1200# (WITHOUT SLIPPAGE OF THE FITTING!). ALL FAA-PMA cables are produced to this standard, which is difficult if not impossible to meet in a field environment where a simple nicopress tool is used to fabricate the cables.
(Classic Aero LLC and Univair both produce cables to this OEM standard)

The point Gerry was trying to make, and I want to reinforce, is that you can make cheap cables for about $25-28 each, And, the untested failure rate is relatively high. In the alternative one can buy certified cables for twice to three times the home-made cost which have been pull tested for slippage to more than 1200#- and you will be assured of proper, long-term, safe operations without cable failure. Learn from Gerry's mistake, we are all lucky that he is here to share it with you.

Is the loss of control in your aircraft worth the additional $300-400? For most of us it is.