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The Ubiquitous 8-pin "Round Mobile Microphone Connector" – aka the "Foster Connector"

Don Dorward, VA3DDN

This little 8-pin connector (Figure 1) is probably the best-known microphone connector ever used in Amateur Radio.

Here are just a "few" names or references for this popular connector:

- Alinco FM214-8 SMPY
- Aviation connector
- Falcon Antenna ECS-31-1208
- Icom FM214-8
- Jetstream SKY8
- Kenwood E06-858-15
- KJE 26-0622
- MCM 27-728
- Multi-pin mobile connector
- Philmore 61-28
- Radio Shack 274-025 (or-0025)
- Redmond CB C8P
- Yaesu FM 214-8

There are many more, I'm sure and yet surprisingly there is no standard for its dimensions or its name, nor for its pin assignment. Its history however goes back to 1950 or thereabouts.

Why am I interested? Well back in 2012, I was theoretically retired, however the sourcing and reliability of this connector suddenly became up front and personal to me and the company I had just retired from! What follows is a brief summary of that experience.

Some History

This popular connector (2 – 8 pin) is said by some to have originated with Amphenol in the early days, who sold off their tooling at some point. Well, perhaps just hearsay – but who knows?

What is known is that in the 1970s some CB radios were said to be using a version of this connector, made in Japan.

In any case, at some point later on the Foster Electric Company of Japan apparently became the major supplier of these parts and it was found on many models of Alinco, Icom, Kenwood, Yaesu and other communication radio suppliers.

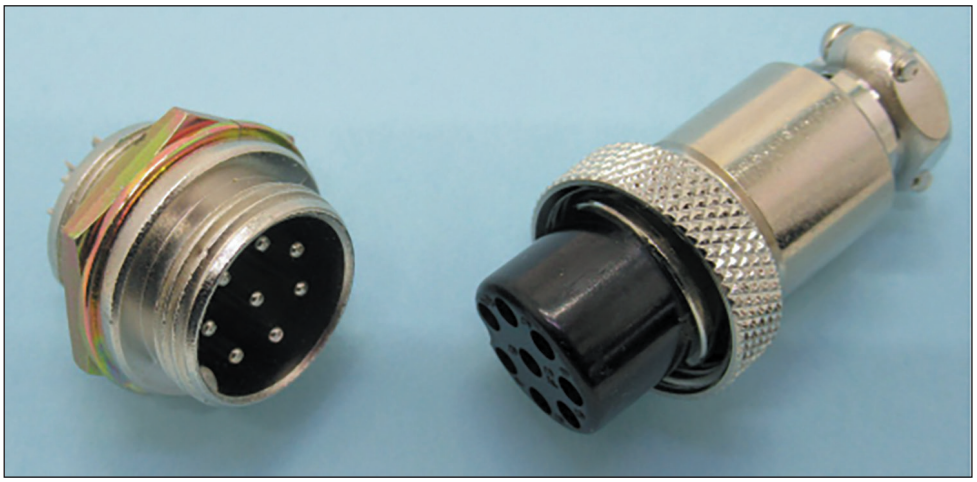

Figure 1: Typical male and female "Foster Connectors".

In fact, the name "Foster" became so ingrained, that in the USA in particular, they were actually referred to everywhere as "Foster Connectors".

Figure 2 shows a view of the branding of a "real" Foster connector.

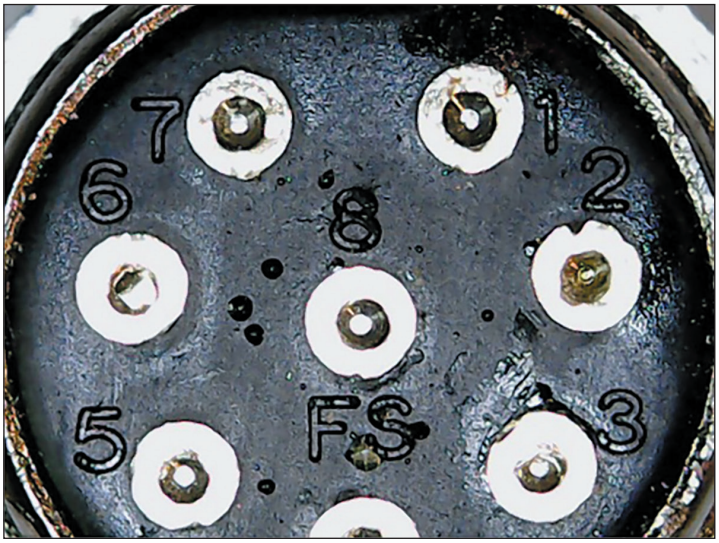

Figure 2: Close up showing Foster brand on a male connector.

However, in 2011, there was a massive earthquake in Japan and sadly much manufacturing was abruptly discontinued as the facilities of many businesses were lost, including Foster.

Reality

It took a while for the reality to sink in at my employer, but suddenly they could no longer obtain any further quantity of the "Foster" type 8-pin connectors, from anyone. Most embarrassing, as our end customer for the product we manufactured using them was in Japan!

As we normally used a lot of these connectors, our own manufacturing was seriously affected and curtailed while we scrambled to find a substitute. As you might expect, counterfeit parts began to be offered, but which as it turned out had serious quality problems. Long story short, with help from our Japanese customer, my employer eventually located the Waka Manufacturing Company in Taiwan who were eventually able to supply to us a very acceptable quality product and I understand do so even today.

Dimensions and Counterfeits

The male pin diameter (1.15 mm / 0.045 inches) always seemed to be well controlled even in otherwise faulty parts. The problems were always about the female contacts, of which many had no insertion force at all and of course no resultant contact wiping action. Such contacts quickly became intermittent connections. It was a nightmare and as you can imagine field failures occurred entailing expensive rework, etc.

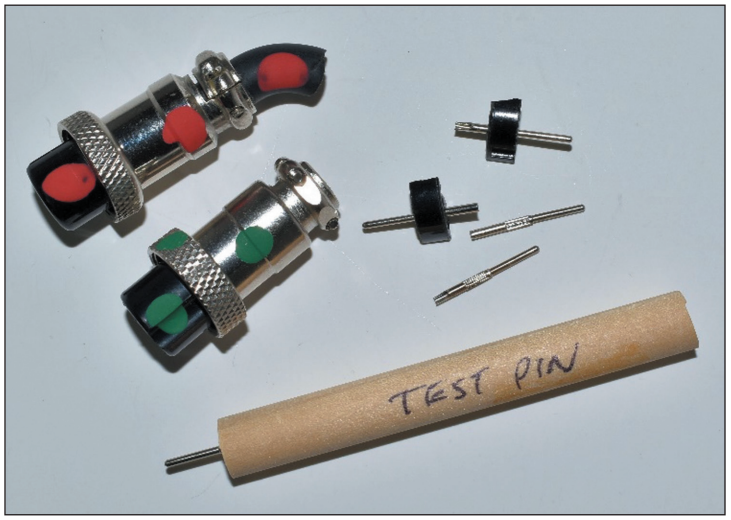

Figure 3: Female connectors tested with a male pin taken from a broken connector.

Figure 3 shows how a male pin taken from a male connector can be used to assess insertion force. We found that with intermittent parts having essentially zero insertion force, the "test" pin would simply drop out if the connector was inverted!

Present Day

Although I don't know if Foster Electric is again supplying connector pairs, there seems to be no shortage these days of other suppliers including Waka, Toyo, Philmore and the newcomer Renhotecpro of China. The Renhotec parts are called "Aviation Connectors" by the supplier and are advertised for Avionics and Marine use. In fact one version is claimed to be waterproof. I came across these while internet browsing and obtained a few. They seem good.

Notes:

Although I have focused on the 8-pin version of this connector, its "series" also included 2, 3, 4, 5, 6 and 7 pin versions.

During the struggle to find another source for this part, I spoke to the now late Bob Heil of Heil Sound to explore the possibility of purchasing a quantity of his proprietary version of this connector. We had a great conversation, but were unable to come to any business agreement.

There is a Wikipedia reference to there being another Japanese supplier who may continue to supply the Japanese radio manufacturers. Marushin Electric of Japan shows an impressive catalog of connectors including their M753-8P. My thanks to Wikipedia.org for their supporting information published under the title of "Microphone Connector, Multi-pin Circular Connectors", as of July 21, 2024.

Don Dorward, VA3DDN, has had 44+ years experience in the electronics industry including vacuum tube manufacturing, semiconductor and component testing, R&D, ISO Quality Systems, Regulatory Affairs, UL/CSA/EU/CE/EMC compliance, Environmental testing, Standards & Calibration. He has been an Amateur Radio operator since 2002.

He is a LifeMember of the Institute of Electrical and Electronics Engineers (IEEE) and is a member of the American Radio Relay League (ARRL), RadioAmateurs of Canada (RAC) and the Radio Society of Great Britain (RSGB). He can be reached at va3ddn@myrac.ca.