ABCDEFG
HIJKLMN
OPQRSTU
VWXYZ12
3456789
0- ÄÖÜ

Cover image: Typographic specimen of *fälschungserschwerende Schrift* (falsification-hindering typeface), Karlgeorg Hoefer, 1978. Courtesy Otmar Hoefer, *Interessengemeinschaft für Esel- und Mulifreunde in Deutschland* (German Society for the Friends of Donkeys and Mules)

Following a spike in automobile thefts through the early 1970s—many of which involved tampering with stolen tag numbers to elude police detection—the German government commissioned a new license plate typeface. It was December 1977, and Germany was still raw from a recent rash of hijackings, murders and suicides associated with the Red Army Faction.

Since 1936, German vehicle license plates (along with most official government signage) had been stamped in a clean sans-serif typeface, **DIN 1451**. Its square raster grid produced only perfect geometric forms with identical stroke widths and line lengths. The **L**, **F**, and **E** differed only in their respective single, double, or triple strokes; **P**, **R**, and **B** all shared the same basic components; and the letter **O** and number **0** were close cousins, distinguished only by a small difference in girth. While initially intended to help standardize the license plates' industrial production, the type's formal simplicity had an unforeseen consequence: with the application of black or white paint or tape, any **8** could easily become a **3**, an **L** an **E**, and so on. As such, when the BASt (Bundesanstalt für Strassenwesen, or Federal Highway Research Institute) issued its criteria for the new typeface, the core mandate was to thwart attempts to change any one character into another.

This BASt commission to replace the **DIN** letters fell to Karlgeorg Hoefer, a seasoned calligrapher and professor of design nearing retirement from the college of applied arts in Offenbach. During the war, Hoefer had served as a Sergeant in an infantry unit. In 1940, he received the Iron Cross for his role in raiding a Norwegian nickel factory, but his subsequent years of military service were somewhat checkered: a stint designing statistics displays at the Wehrmacht headquarters, another as a grave-mover in a cemetery detail, and a year as a Russian prisoner-of-war. Hoefer moved to Offenbach to begin teaching in 1946, and spent the next few decades designing typefaces for a number of regional foundries, including Stempel AG and Klingspor (whose eponymous museum of book art now houses some of his archives), and ultimately for the sprawling international firm Linotype.

A talented and obsessive calligrapher, Hoefer specialized in making mechanically-reproducible versions of ornate, hand-drawn lettering. One of his

first major releases, Salto (1952), was typical: a humanist, Art Deco script with heavy, wavy brushwork and strikingly variable stroke widths. (Its only commercial application appears to have been the packaging of the Dortmund-based company Brause's brand of calligraphic pen tips: Hoefer had invented model number 505, which he used to draw the font itself.) Over the next few years, Hoefer elaborated his interest in open letter-spacing and diverse shading techniques, and hewed to a persistent, even outlandish commitment to the wide-nibbed. His designs included Zebra (1965), named for the parallel cross-hatching of its "gray" shading; the semi-faux-Japanese Sho (1992); and his Mod-ish, awkwardly fleshy headline face **Bigband** (1974)—Rudolf Koch's popular **NEULAND** as re-imagined for an episode of *Scooby-Doo*. Hoefer's talents were also deployed to pedagogical ends. A number of his simplified cursives such as Latein. Ausgangsschrift (1968) were used to teach handwriting, traced over and over by generations of German schoolchildren.

The original 1977 BASt brief for the license plate typeface listed the following basic requirements, in order of importance:

1. Legibility (clearly readable by both humans and machines)
2. Resistance to forgery
3. Aesthetics

Hoefer had to work within this complex set of criteria, each one mitigating the others. The task would likely require an alphabet of mutated forms—letters that would photograph well in transit when captured by police cameras, while also remaining legible to the average citizen. Number 3, "aesthetics," was included to ensure a designer's letters wouldn't depart too much from conventional shapes.

Significantly, the directive of forgery resistance—ostensibly the reason for the project in the first place—was now seemingly less important to the government than mechanical recognition. While human legibility was necessary, the primary intended reader of this typeface was to be the State. The BASt understood well enough that mechanized vision, in the form of automated highway surveillance, was coming soon, and that the new letters would also need to be readable by the Optical Character Recognition devices being developed at the time.

By early summer 1978, after only a few months' work, Hoefer produced the first version of what he called *fälschungserschwerende Schrift*, the "falsification-hindering typeface," or **FE-SCHRIFT** for short—a wobbly, asymmetrical alphabet considerably at odds with received typographic wisdom. Hoefer "calligraphically" differentiated each letter and number using an idiosyncratic set of contrasting serifs, angles, counters, and stroke widths. Some characters have serifs and some do not; some closed counters are squared-off while others are rounded; and edges and corners don't snap to any clear grid. There are weird geometrical variations in the interiors of the **C** and **D**; the **E** has an elongated, slightly swollen foot; the **M** and **W** are at wincingly pinched inverted angles. This lack of intrinsic aesthetic cohesion is its main defense against alteration or substitution. The **3** can't easily be changed into an **8**, because they are two fundamentally different characters.

How to differentiate the letter O from the number 0? Karlgeorg had already made the former more egg-shaped, but it was his son Otmar who suggested using the slashed-zero (Ø) he had seen in his school math books. When OCR testing later determined that the dark center slash mark muddied the character's digital legibility (making it confusable with an 8), however, Hoefer simply incised the top right-hand corner of the **O**, leaving a ghostly, implied line instead.

The BASt document wryly noted that even an illiterate could forge a **DIN 1451** plate, since its rectilinear grid clearly suggested any missing shapes. In retrospect, it seems that the defiance of typographic decorum demanded by this particular set of characters fell quite naturally to a calligrapher: someone who could—like a sophisticated illiterate—attend to each character on its own terms. The most salient instruction in the government's brief was that this particular set of characters ought to resist merging into WORDS, and remain instead a set of discrete SIGNS. Since license plates don't have to communicate anything linguistically, they are defined by a form of calculated randomness. Hoefer's alphabet had to duplicate this logic. In other words, in order to ensure the typeface was both tamper-proof and machine-readable, he required each letter, above all, to be *simply and completely itself.*

Legibility testing began in July 1978, at the department of Physiology

and Cybernetic Psychology at the University of Giessen, and lasted four years. Some letters required alterations in light of the findings, and Hoefer was generally unhappy with the results. By the time the process was complete, however, the terrorist hysteria had subsided, along with the political will to implement the change, and **FE-SCHRIFT** was put into a drawer where it lay forgotten for the next 15 years.

Then, in 1994, a policy review of national license plate design noted another spectacular rise in unsolved car thefts. Stolen license tags had almost tripled over the previous four years (from 30,000 to 86,000), presumably as a result of the opening of the border between East and West after the fall of the Berlin Wall in 1989. Recalling that this problem had been raised before, the government reviewed its history, alongside a few new proposals with varying degrees of bureaucratic rationality. One involved issuing each citizen a unique, permanent plate number for life (like a Social Security number), but since all license plates begin with a city code (F for Frankfurt, M for München, K for Köln, etc.), the plan would have meant that car owners could not legally move to another city, and so was swiftly rejected. (It was also noted that this particular strategy would have put the license-plate manufacturing sector out of business.)

The same government report detailed the fate of the **FE-SCHRIFT** since 1982. It had been abandoned because it was found to be relatively easy to completely remove license plates from vehicles and switch them for alternate ones, which obviously rendered a tamper-proof typeface somewhat irrelevant. The government had considered forcing car manufacturers to change their bumper designs, but there were too many private interests involved. In retrospect, then, four years of research and development had been dedicated to an effectively redundant task. What Karlgeorg Hoefer earnestly believed would be a technological decoy set up to combat the radical Left, instead became a gauge of bureaucratic folly and political paranoia.

Also by 1994, commonly coded yet nationally distinct license tags were about to be issued across the EU, and this meant a new opportunity to lower theft statistics. With a perfectly serviceable and fully paid up proposal in-hand, the new government resolved to put **FE-SCHRIFT** to

work, some 16 years after its conception. The new plates were immediately issued without fanfare in Berlin and Brandenburg, and implemented nationwide by the turn of the century. Automated highway surveillance was now ubiquitous—a fully-integrated tool of law enforcement finally developed enough to operate hand-in-hand with Hoefer's typeface.

Born awkwardly between eras—drawn by hand in order to be better read by machines—the *fälschungserschwerende Schrift* bears the marks of both 19th-century guild-enshrined handcraft and 20th-century anonymous automation. And like any technology, it is bound by the political determinants of its design: while its original "tamper-proof" premise may have proved a Macguffin, these weird-looking letters are an early product of our contemporary surveillance state. What reads to us as a clumsy lack of formal continuity is exactly what makes it legible to a computer. It is an alphabet whose defining characteristic is precisely that it has no defining characteristic, other than having no defining characteristic.

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