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# THE SECRET LIFE OF 'FLIRTS'

David Adams

523013 calls at Flüelen with the 18.01 S2 service from Erstfeld to Baar Lindenpark, 18.06.2013.

All photos: David Adams

I can almost feel the potential antagonism that an article about 'Flirts' may generate as I write this, knowing that several SRS members are less than enthusiastic about what I have heard described as "modern plastic trains". Personally I take the railway as it is, which involves an acceptance of the inevitable ongoing process of modernisation, even though some dear old friends may be lost along the way. In my defence it has taken nine years to put pen to paper on this subject and I was as pleased as anyone not to see more than a fleeting glimpse of just one 'Allegra' unit (not in service), on a recent journey from Reichenau-Tamins to Chur then on to Landquart via the SBB, returning to Chur on the RhB. But please read on.

The first Stadler Rail 'Flirt' units were delivered to the SBB in 2004, classified as RABe 523, and allocated to Zug S-Bahn services. A further order went to Lausanne S-Bahn services and they now appear in many other operational areas. Class 523 is the basic version for Swiss operation which is confined to lines within the country. Further units have been acquired with additional equipment to allow cross-border operation; Class 521 into Germany; Class 522 into France, and 524 into Italy. They became so successful that nine other European countries have ordered the design, as have Swiss private operators SOB, TRN and more recently TPF. It is therefore not unusual to occasionally see units built for other countries, especially at Stadler's facility at Erlen between Weinfelden and Romanshorn, where I noted a Norwegian unit in 2012. A diesel version has also been ordered by Estonia. Some 600 units must now have been produced. 'Flirts' are not to be confused with

Stadler's 'GTW' units, introduced in 2003 and are of a fundamentally different design.

The outstanding performance qualities of 'Flirts' are one of the main factors leading to their success, namely their capability for rapid acceleration and deceleration. A typical four-car unit can develop a maximum of 3,500hp over a short time, and a continuous output of 2,700hp. This makes them ideal for operating local services where the distance between station stops is relatively short. I occasionally write articles covering traction performance for the Railway Performance Society, so on my 2013 Swiss visit I thought it about time I timed a couple of 'Flirt' runs to get an idea of just how well they performed. I was not disappointed.

The table shows a run from Rotkreuz to Luzern, a section I chose to time because of the frequent stops and the 160 kph line speed from just west of Rotkreuz to approaching Ebikon. I have shown both kilometres and miles to make for easier reading for those more in tune with imperial measurements. The start from Rotkreuz is restrained as speed has to be held in check until the junctions at the west end of the station are cleared but a maximum of at least 87mph was attained before slowing for the first stop at Gisikon-Root. In the U.K. Class 323 and 350 EMUs can make very lively starts but a 'Flirt' leaves them standing. I found it difficult to make like for like comparisons but the fastest time I can find for the first 0.72 miles southbound from Birmingham International with a Class 323 is 59½ seconds, which is somewhat short of the remarkable 49½ seconds taken by 523 043 for the 0.72 miles from Gisikon-Root to passing KP 54. The start-to-stop times between some



# ROTKREUZ - LUZERN


TRAIN:	08.47 BAAR				
DATE:	TU 18.06.13				
"FLIRT" UNIT:	523043				
LOAD E/F POS.	4/163/166 1/4				
DISTANCE			ACTUAL	AV.SPEED	
KM	MILES		M.S.	KPH	MPH
0.00	0.00	ROTKREUZ	0.00 (½ LATE)		
0.99	0.62	KP 50	1.07½	52.8	33.1
1.99	1.24	KP 51	1.38½	116.1	72.0
2.99	1.86	KP 52	2.04½	138.5	85.8
<u>3.82</u>	<u>2.37</u>	GISIKON-R	<u>2.47</u>	70.3	43.2
0.00	0.00		0.00		
1.17	0.72	KP 54	0.49½	85.1	52.4
<u>2.46</u>	<u>1.53</u>	ROOT D4	<u>1.45</u>	48.6	52.5
0.00	0.00		0.00		
0.71	0.44	KP 56	0.39	65.5	40.6
1.01	0.63	KP 56.3	0.48	120.0	76.0
<u>1.81</u>	<u>1.12</u>	BUCHRAIN	<u>1.29</u>	70.2	43.0
0.00	0.00		0.00		
0.70	0.43	KP 57.8	0.38½	65.5	40.2
<u>1.52</u>	<u>0.94</u>	EBIKON	<u>1.26</u>	62.1	38.7
0.00	0.00		0.00		
0.96	0.60	KP 59.4	0.43	80.4	50.2
4.88	3.03	Friedenthal Tnl WP	3.32	83.5	51.8
6.35	3.95	Gütsch UB	4.47	70.6	44.2
			Sig.Stops (2)		
<u>8.47</u>	<u>5.26</u>	LUZERN	<u>13.11</u>	(4 LATE)	

stations were the best I have ever recorded over such short distances, and braking for the stops was very well judged with no sign of the frustrating 20mph crawl into stations to which we have become accustomed in the U.K. On the final approach to Luzern we were stopped twice by signals due to the slightly late departure of other services. The margins on this two-track pinch-point leave little, if anything, to spare at certain periods in the hour despite full advantage being taken of reversible working.

I have also discovered that some 'Flirts' do have a secret life as they actually serve some supposedly 'closed' stations. These are the Class 524 units that operate the TILO branded S-Bahn services in Ticino with some S10 workings continuing to Albate-Camerlata, the second stop over the border into Italy after Chiasso. Northbound trains normally terminate at Castione-Arbedo, 3.6km north of Bellinzona, with one an hour

LEFT: 523024 arriving at Lausanne with an S2 service from Vallorbe to Palézieux. 02.10.2012



terminating at Biasca 19km further north. When planning my 2013 travels I came across some unusual workings which I thought warranted further investigation and the following came to light. On Mondays to Fridays the 16.33 S10 from Chiasso runs through to Airolo arriving at 18.37. It is formed of two units to Biasca where the rear unit is detached. This then goes forward calling at Faido and Ambri-Piotta (which is technically 'closed'). On arrival at Airolo it then moves to a siding. Out of curiosity I used this train from Biasca to Airolo on one occasion this year. It was very lightly loaded north of Biasca but a few passengers did alight at Ambri-Piotta. The 80 kph maximum line speed, applicable for most of the journey, prevented any exceptional times, but of course the starts were very quick off the mark. The running time from Faido to Airolo, including the Ambri-Piotta stop, was a few seconds faster than the Re4/4<sup>11</sup> hauled six-coach train running non-stop from Faido experienced a few days earlier. There is also a 22.03 S10 from Chiasso to Airolo, running daily, making the same stops and arriving at 23.58. As there are no empty train movements shown on the graphic timetable I assume that they remain at Airolo overnight and form the southbound S10 departures at 06.29 (Monday-Friday to Chiasso) and 06.57 daily to Milano Centrale. They both call at Ambri-Piotta, and the latter also at 'closed' Lavorgo. Neither station appears in Kursbuch Table 600, however the departure/arrival sheets for Airolo, Ambri-Piotta and Lavorgo all show these services and the stations are shown on the route map available on the TILO website. The Ambri-Piotta professional ice hockey club has a very strong following and is a member of 'National League - A'. The occasional special train therefore operates in connection with home matches, hence requiring the station to remain operational for passengers. Why do these 'Flirt' operations call at stations not shown in the Kursbuch? It is very un-Swiss and remains a puzzle I have been unable to crack to-date. Hopefully I have helped discover that "modern plastic trains" can produce some topics of unexpected interest. 

RIGHT: 524008 stabled in the siding at Airolo after arrival with the 16.33 S10 service from Chiasso. Re4/4<sup>11</sup>'s, 11133+11108, head the "Orient Express" 19.06.2013.

