



1). CLASS 15F NO.3046 – A BRIEF HISTORY :

Class 15F No.3046 'Janine' was the first restoration project undertaken by Reefsteamers in 1992. She needed major work, including a full strip-down of all the axles n' motion, and a full Duco paint re-spray.

The project took too long and the new preservation group needed to work with locomotives requiring less work, to be able to earn funds to keep themselves going. Thus, this great machine was laid aside under cover and remained in a partially restored state for over 15 years. With a mixed collection of boiler fittings and pipes, she was finally restored back into working order in 2009 and is currently named 'Janine,' after the daughter of one of the Reefsteamers volunteer firemen.

With the exception of a failure on the RHS valve gear, and a surprise blown gasket on an injector, 15F No.3046 hasn't needed anything more than minor running repairs. She has proven to be a reliable, hard-working locomotive in her now-three years of service since the completion of restoration in 2009. Although somewhat heavy on coal if the mechanical stoker is over-used, she 'eats' a lot less if hand fired by a competent fireman. The narrow, deeply winged firing portal is not designed for hand firing, so hand-firing this hungry machine has become a challenge to which the young volunteer firemen are striving!

The Class 15F is a heavy mixed-traffic locomotive of the 4-8-2 wheel arrangement. ('Mountain') It is very closely based on the previous Class 15E 'Bongol' (Donkey), but with more old-fashioned Walshaerts valve gear instead of the 15E's unusual rotary-cam poppet valve gear. With the more conventional (if less free-running) valve gear, the Class 15Fs were very successful. 255 Class 15Fs were built by four different manufacturers, making it the most numerous locomotive class in Africa. The 15Fs were initially used in the Free State and Western Transvaal, but were eventually found in service all over South Africa.

They are conventional locomotives by SAR standards, but advanced in Glasgow, where the later batches were built. They feature full vacuum braking, powered grate shakers, powered reversers, self-cleaning smoke boxes, turbine dynamos, hydrostatic lubrication, self-cleaning smokeboxes and mechanical stokers. A distinguishing feature on the 'Fs' are the prominent, wide Wootten-type fireboxes and the long, high-pitched boiler which allows room underneath for 5 ft dia. driving wheels. (Large wheeled locomotives are difficult to design on the 'narrow' 3ft 6in Cape Gauge.) They were also noted as being built from new with a standardized boiler (The Watson 3B) as well as the then-recently adopted slope-fronted 'Watson Cab.' Many other classes were re-boilered to C.M.E. Watson's standards and had their old cabs replaced. The 15F's were amongst the last SAR steam locomotives to remain active in revenue service.

Class 15F No.3046 is a 'war baby', being built in 1945 by North British Locomotive Works. As a later version, she was fitted with a mechanical stoker, smoke deflectors and a vacuum-operated loco-brake from new – those features not included in the earlier models. Many elderly 15Fs had their mechanical stokers removed when they were demoted to shunting service at the end of their careers, but No.3046 retained hers. Many of the class spent their last active days doing heavy shunting and trip working.

However, like many of her sisters, 15F No.3046 did gain a surplus type EW long-range tender from a retired Class 23. The six-axle tender is huge and is ideal for long distance work. The jumbo-sized 15Fs, had surprisingly short tenders when built, to be able to fit on the turntables that were then in use.

Class 15F No.3046 is famed for having pulled the Royal Train in 1947, with the then-Princess Elizabeth on board. 15F No.3046 was only 2 years old back then. Built in 1945, this locomotive was retired in 1988 after 43 years of service. The aged locomotive was kept intact as a reserve by then-Spoornet and although not in use, she underwent boiler steam testing for four consecutive years, until use of steam traction officially ended in 1992. Class 15F No 3046 is also one of the locomotives named in 1945 by the then-minister of Transport, the Hon. FC Sturrock and she originally bore the name 'City of Bloemfontein.' Naming of locomotives on the SAR&H was not the usual official practice.

Numerous examples of 15Fs still exist. Reefsteamers alone has six of them on the premises. Class 15F No.3046 'Janine' currently is the only operable Class 15F locomotive in South Africa.

As of end March 2013, she is to be staged for inspection and renewal of the 3-year boiler ticket. As the boiler is in good shape, the locomotive is expected to be back in service by July 2013.



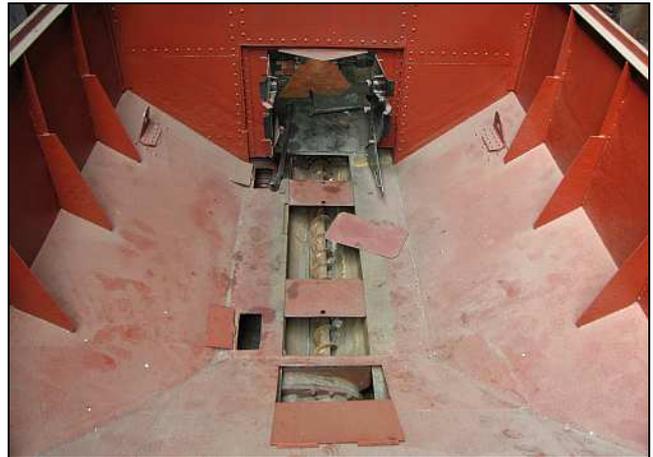
2). THE CLASS 15F LOCOMOTIVE – STATISTICS:

Class:	Class 15F numbers 2902 to 3156 255 were built from 1938 to 1946. Built : 1945 by North British.	Tender Type:	Type ET – Original. Type EW – Ex Class 23 (For extended Range.)
Designer:	Chief Mech. Engineer W.A.J Day.	Tender Weight:	70.5 tons wk/order. (Orig. ET) 109.4 tons wk/order. (EW)
Builder(s):	Berliner Maschinenbau. Henschel and Sohn. North British Locomotive Co. Beyer, Peacock and Company.	Fuel Type:	Coal – via Archimedean Screw-type Mechanical Stoker.
Configuration:	4-8-2 'Mountain' with 2nd driver axle as the 'main' driver.	Tender Coal:	14.2 tons. (Original ET Type). 18.3 tons. ('Long' EW Type)
Track Gauge:	3 ft 6 in (1,067 mm) Cape Gauge.	Tender Water:	25 000 liters. (Original ET Type) 43 000 liters. ('Long' EW Type)
Driver Wheel Diameter:	5 ft. (1,520 mm)	Boiler Dimensions:	6 ft 2.25 in. (1.89 m) int. dia. 22 ft 6 in. (6.86 m) int. length 9 ft 2.5 in. (2.8 m) pitch
Total Locomotive Length:	73 ft 6 in. (22.401 m)	Boiler Pressure:	210 psi (1,450 kPa)
Height:	12 ft 11.5 in. (3.950 m)	Fire Grate Area:	63 sq. ft. (5.85 m ²)
Frames:	Bar Frame with split saddle.	Heating Surface of Tubes:	136 tubes 2.5 in. (64 mm) ext. dia. 36 tubes 5.5 in. (140 mm) ext. dia. 3,168 sq. ft. (294.32 m ²)
Loco Weight:	114.9 tons.	Heating Surface of Flues:	26 sq. ft. (2.42 m ²)
Max. Axle Load:	18.4 tons on 2nd & 3rd drivers.	Heating Surface of Firebox:	206 sq. ft. (19.14 m ²)
Total weight on drivers:	71.8 tons.	Total Heating Surface:	3,400 sq. ft. (315.87 m ²)
Tractive Effort:	42,340 lbf. (188.3 kN) at 75% boiler pressure.	Superheater Area:	676 sq. ft. (62.802 m ²)
Cylinders:	Two.	Valve Gear:	Walschaerts. (With steam-powered reverser.)
Cylinder Size:	24 in. (610 mm) bore. 28 in. (711 mm) stroke.	Locomotive Brake:	Pre-war models: Steam. Post-war models: Vacuum.



Snapped at the Germiston Depot, where she still lives today 30 years later, a grubby and then-nameless Class 15F No.3046 waits in the Western Yard, coaled-up for her next turn of duty. Notice that the diesels had already started to move in. (Visible in the background.) Photo by Phillip Braithwaite – Circa late 1980s.

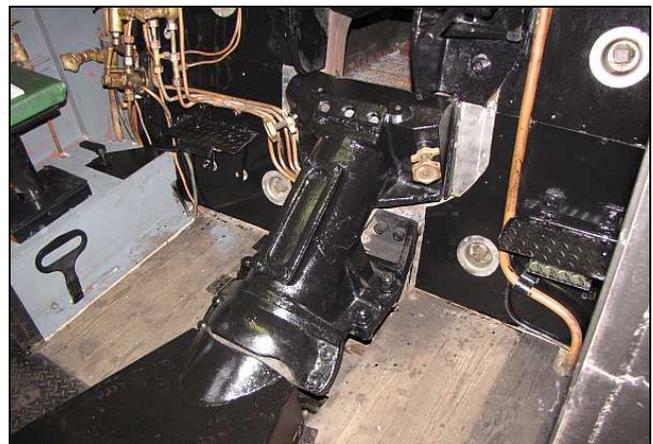
3). CLASS 15F 3046 'JANINE' - RS TIMELINE IN PICTURES :



P01 - After over a decade of storage in an incomplete condition, Class 15F No.3046 had the remaining boiler and backhead fittings mounted, and then underwent boiler testing on 9th April 2010. It was the first time that this locomotive had been in steam since 1992 (18 years) and 22 years since the locomotive was retired from then-Spoornet service. (The retired but still-intact locomotive underwent 4 years of annual boiler testing as a reserve.) The RHS picture shows a view of the newly primered coal tender and a view of the Archimedean screw for the mechanical stoker.



P02 - With smokebox newly painted in black etching primer instead of the traditional graphite, on 1st May 2010, Class 15F No.3046 was waiting for her smoke deflectors, as well as some final stoker, reverser and injector repairs.



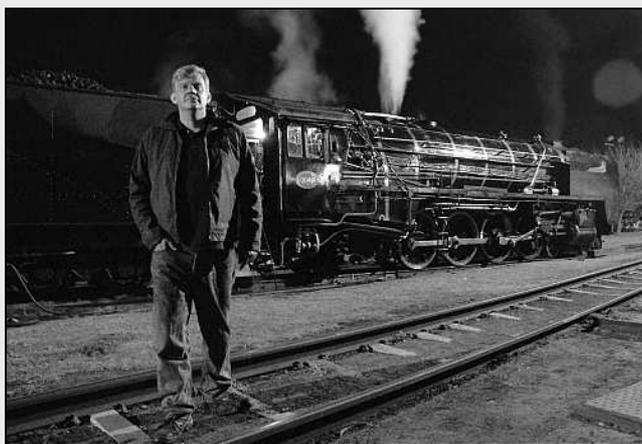
P03 - A view of the mechanical stoker's coal elevator casting, freshly painted and standing out against a clean, rebuilt floor in the nearly complete cab. The entire backhead and all the fittings had to be refurbished.



P04 - 15F No.3046 went out with a short train on a test run to Springs on 19 June 2010. The trip was successful but badly delayed due to routing issues. No.3046 ran great except for some lubrication problems. (Pic by L. Lategan)



P05 - Class 15F No.3046 entered revenue-earning service for Reefsteamers on 20 June 2010 and she was an instant hit. Here, she is seen powering home past the gold dumps of the ex-REGM mine towards Krugersdorp. (Pic by AMC)



P06 – With some ‘tude going, the author stands in front of the locomotive on his first session of tending to the beast. She had a crew of three men and one videographer in attendance overnight before her first revenue-earning run.



P07 - On a freezing winter's morning in July 2010, one of the loco minders who had tended No.3046 overnight is wiping fly-ash from the boiler while the crew get ready. A cotter pin came loose on a combination lever on this trip.



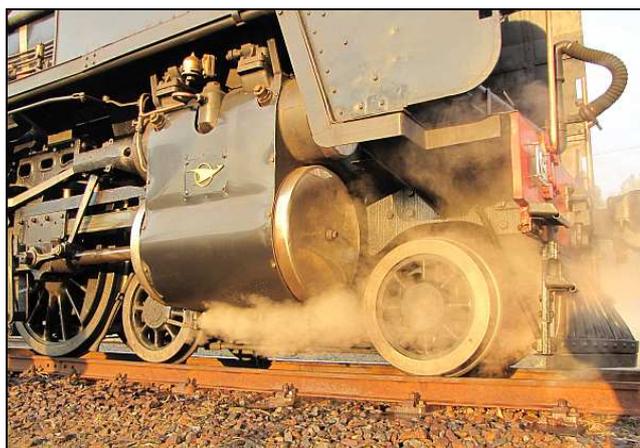
P08 - Then still unnamed, Class 15F No.3046 was one of three locomotives steamed for our 2010 mid-winter Depot Open Day on 24 May 2010. We used the smaller Class 12AR to pull the train, so No. 3046 was the yard show-off.



P09 - One of the features of 15F No.3046's restoration was a properly prepared and spray-painted Duco paint job. Almost 3 years after this picture (Mid 2010), she still remains the shiniest and easiest cleaning loco on shed!



P10 - 15F No.3046 was officially named 'Janine' after a fireman's daughter, on Janine van Dyk's birthday. The loco will bear this name for a minimum of five years. The titular Janine is standing on the buffer beam with her proud dad, on 26 Aug. 2010. We considered formally naming the locomotive after HRH Queen Elizabeth whom she hauled in 1947, but we would have need royal permission to do so.



P11 – 24 Inch diameter of power – the right side steam chest is bronzed by the Free State morning sun early at Bethlehem Station. Class 15F No.3046 has done two Cherry Festival trips with us. She was paired with 25NC No.3472 in 2010 and did the trip alone in 2011. (Electric hauled between Johannesburg and Bethlehem on both trips.) With good lube, she handles the long trips with ease.



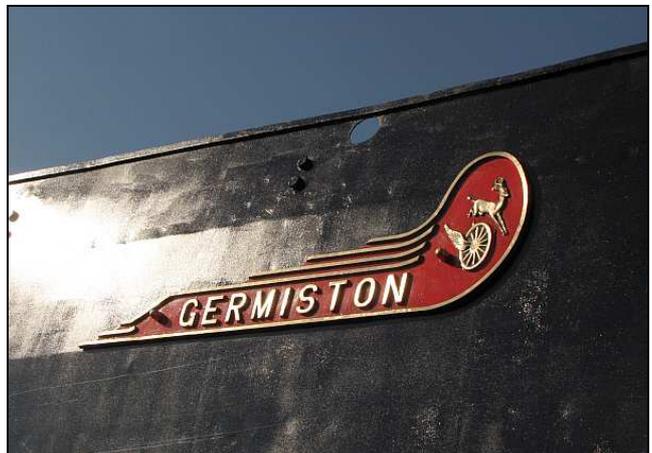
P14 – Reefsteamers fireman, George Hoddinott, took on the challenge of firing this mech. stoked locomotive by hand, and proved it can be done even through that narrow, winged portal. Hand-firing 3046 was one of the inspirations for the present repair work on 'hand bomber' 15F 2014.



P15 - On 4 November 2012, 15F No.3046 'Janine' had a bit of fun being featured in a steam-train themed music video, featuring Afrikaans singers Snot Kop and Kurt Darren. That copious brown smoke was being deliberately made for the camera hovering over the ash pits in the foreground!



P14 - The Class 15F was based on the previous successful Class 15E, but with conventional Walschaerts valve gear. Although an older design, they proved to be rugged machines with easily maintained valve gear. 255 examples were built, becoming the most numerous class on the SAR.



P15 - Although historically called 'City of Bloemfontein' by the SAR as a new machine in 1945, 15F No.3046 'Janine' currently wears a pair of 'Germiston' wing plates. The 'communal' plates are worn by whichever smoke deflector-equipped locomotive is in current service.



P16 - On a Saturday shunt at the Germiston Steam Loco Depot, which is preserved by Reefsteamers, Class 15F No.3046 is moving long-distance touring coaches. You can clearly see the massive ex-Class 23 Type-EW tender that many Class 15Fs inherited when the Class 23s were retired en-masse due to metal fatigue cracks in their frames.



P17 - Reefsteamers normally runs their locomotives for a four-month duty cycle. (About 8 x 190km trips). Due to lack of alternative motive power in 2011/2012, this marvellous machine has been running all of our trips for just over a year. As of end March 2013, 15F No.3046 will be staged for a new 3-year boiler ticket. (Pic by A. McCarthy)

4). CLASS 15F NO.3046 IN MINIATURE :

The subject of this Locomotive Profile, **Reefsteamers' 15F No.3046**, is also available for you to own in HO scale in 16.5mm gauge. Adrian Hill of ScaleCraft miniatures continues to build detailed but running HO replicas of South African Locomotives, as well as rolling stock. Currently under development is a Class 23 steamer and a 6E electric.

Presently, the various 15F locomotives are only available with a short tender (as shown), but an extended-range ex-Class 23 tender (Type EW) is currently under development and is nearing completion.

You can also order No.3046, or Reefsteamers' No.2914, as well as Friends of the Rail's No.3117 or 3094. You can also order an unnumbered Class 15F locomotive in plain black, blue or green livery.

The model depicted in the photo is an earlier promotional prototype under another number.

The model is largely cast in resin, but many parts are separately mounted and are made from laser-cut plastic, brass, copper & white metal. It runs on a new Mehano chassis and there is enough space to fit a decoder in the locomotive. The tender chassis has recently been redesigned, and one of the upgraded features is the provision of electrical pickup in the tender's axles for more reliable operation, as well as pre-cast/drilled apertures for speakers and wiring.

The bissell truck has recently been redesigned for better tracking (heavier) as well as avoiding fouling on the HO-scale injector piping on the necessarily unrealistically tight curves of a typical model train layout.

ScaleCraft installs either constant current lighting or DCC depending on the Customer's preference. (Notice the modelled classic Pyle National barrel-type headlamp – as currently fitted to 15F No.3046 in real life!) Keep in mind that the models are designed and assembled in such a way that DCC can be fitted later on, if not factory fitted.

The model comes fitted with Kadee couplers pre-mounted at NMRA height standards, as well as constant current lighting. There is a sub-miniature plug connecting the tender to the locomotive so as to allow for the two to be separated from one another.

The model is shipped-out with a purpose-made Perspex display case on a wooden base.

ScaleCraft
Building the little things in life

Adrian Hill's ScaleCraft is based in Cape Town. Until recently, he was building the models upon demand, but now the various orders will be built in batches.

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Class 15F No.3046 is available locally (by order) via the Railroad Tsar's (aka Rinke Blok) Model Train shop at the Honeycrest Shopping center in Randpark Ridge. He has samples of various ScaleCraft locomotives on display.

The cost of the model is by enquiry. Several of the limited production range were already sold at the HobbyX Expo on Sat, 9 March 2013.

Rinke Blok - Model Train Shop
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