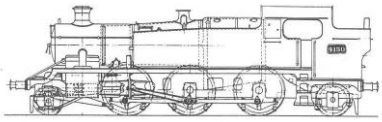
The 4150 Fund 2016 Newsletter



www.4150.org.uk

The aim of the Fund is to restore the steam locomotive to full working order to run on the S.V.R.

CHAIRMAN'S REPORT

Well here we are at the beginning of the year and preparing for the big push, with the Locomotive going to Bridgnorth in April so the Boiler can go into the shop. The Bunker has had the riveting carried out by Phil & Phil from the boiler shop ably assisted by our team of volunteers and what an excellent job they have all done.

I would like to put on the record the outstanding work that has been put in by the team on the Bunker and Tanks. I would just like to mention that Committee Member Dave Insull is on the mend now, from his awful road traffic accident and we wish him well.

The money for the Fund is still coming in but soon the big bills will be arriving, so now would be a good time, if you can, to purchase more shares. The last of the large items have been purchased, e.g. Chimney and Blower Ring.

We must also make a big effort this year on "The Peep Behind The Scenes". If any of you can help with this on the day or can suggest anyway of enhancing the day please contact the Secretary, it will be very much appreciated as always.

There was an issue with the S.V.R Insurance that looked like it was going to be a big problem but after I had a meeting with Nick Ralls, the GM, we have signed a new agreement and all is now updated and covered.

We will be running Brake Van Trips and Specials with G.W.R. Coaches, including 650 the latest to be completed by the G.W.(SVR) A. It is a fantastic job and for those of you who can remember it when it arrived, you will see what I mean. These days out are good fun with a great bunch of people, so please come and join us and help fund our Locomotive.

I hope to see many of you at the A.G.M

SECRETARY'S REPORT

Welcome to your 2016 Newsletter. I must first thank those members of the committee who have contributed some very interesting and informative articles. Since last year I have moved, my new address is 22 Broomfield Road Kidderminster DY11 5PB and email pww1946@gmail.com or info@4150.org.uk . While on the subject of email if you have changed your email address or have finally moved into the 21st century please let me know, it costs 10/8d in old money to use the post. If you need to get in touch and do not have email you can telephone on 01562 720875.

1. **Peep Behind the Scenes is our major fund raising event here on the SVR so please support us on Saturday 16th July this year.**
2. **Make sure you read Page 11 as it has details of how voting went in the referendum to decide the livery for our Loco.**
3. **The AGM this year will be held at 2.00 on Saturday 20th February at the Kidderminster Museum.**

Shareholder Trip One.

Brake van trip 6th August 2016

Over the last couple of years, we have been developing some trips designed to deliver something a bit different and enjoyable.
We started with our brake van trips which are now an annual event this year on Saturday 6th August 2016 steam loco hauled.

These trips really are a great way to experience the line and view the countryside in a totally different way. We aim to run these on the railway's busy Saturdays so we pass and fit in with a collection of service and other trains at each station.
Due to the limited availability these trips are restricted to shareholders and one guest.

We must put on record the support afforded us by the SVR in giving us every assistance in organising and running these trips. Bookings and tickets can be obtained in the usual way from the team at the engine or email Dave McFall at davidmcfall@blueyonder.co.uk. Also from Graham Stevens via the Erlestoke Manor fund shop at Bewdley.

Shareholders and Friends Trip Two.

Evening social special Saturday 28th May 2016

Last year we tested the water with an evening special which proved very popular and enjoyable. We arranged three old Great Western toplights with suitable refreshments (thanks in part must go to our shareholders and supporters down at Bewdley Brewery).
Such was the success of this pleasant and enjoyable evening that we are repeating it. It departs Kidderminster at 6.30 pm for a leisurely run up the valley with a short break at Bridgnorth for a visit to the Railwaymans Arms or for the more energetic a visit to the local chip shop.
We will then have a run back to Kidderminster in time for two connections back to Stourbridge and Birmingham. We have kept these tickets at £15 per head. Unlike the brake vans we have plenty of room so friends and family are all welcome.

Once again bookings and tickets can be obtained in the usual way from the team at the engine or email Dave McFall at davidmcfall@blueyonder.co.uk. Also from Graham Stevens via the Erlestoke Manor fund shop at Bewdley.

HEAD TO HEAD AT LAPWORTH – Dave Massey

Just 17 months after entering service at Stourbridge 4150 was involved in a serious accident at Lapworth on the foggy evening of Tuesday 30th November 1948. The conditions were country-wide with two other similar rail accidents on the same day at Stockport and near Clapham Junction. 4150 had worked the 6.12pm Birmingham – Lapworth local train and whilst running around its set, bunker first, through the station in a northerly direction it was struck from behind by a faster moving express train. This was the late running 4.10pm Paddington – Birkenhead, hauled by 5022 Wigmore Castle, which had overrun signals at danger in the murky conditions.

The Birmingham Post newspaper reported that the collision "hurled" the light engine (4150) forward for 150 yards with the fireman thrown from the cab. The first two carriages of the express were most severely damaged when the second carriage telescoped up over the first, the newspaper reporting that the "first coach was sandwiched then dragged out like a concertina and split into two" – much debris was scattered around the station but by good fortune both engines and the carriages remained on the track. Surprisingly both sets of loco crews only suffered minor injuries and shock and many passengers were similarly injured, mostly cuts and bruises, although two had broken limbs. They were either treated on site by local doctors and nurses or taken to the nearest hospital at Solihull.


Lady Mayoress escapes unhurt in train collision

MIDLAND EXPRESS IN STATION SMASH

Three fog rail accidents: Four dead and 58 injured

NAMES OF INJURED

Torchlight first-aid

(BWPost 3 Dec 1948)

Rail line reopens after crash

Report of November 1969 rail crash at Lapworth (Evening Mail 29 Nov 1969)

Report of train crash at Lapworth 1st December 1948 (Lapworth rail crash)

Report of train crash at Lapworth 1st December 1948 (P1020451)

Lapworth Station in 1972, viewed from the North (RW1040-24)

Lapworth Station (RW1040-25)


Taken 3 December 1948, by B Eccleston

The head to head impact wrecked the front ends of both 4150 and 5022 but following overnight recovery they were hauled to Tyseley for assessment. 4150 was soon despatched to Swindon Works, entering the shops on 15th December for a repair classified as "Heavy Casual". The front end was substantially rebuilt including replacement cylinder castings. 4150 was returned to traffic at Stourbridge on 14th January 1949 having been stopped for 45 days in total. Evidence of the repair can be seen today with welded joints in the angle support framing below the running plate adjacent each cylinder. A recent discovery may well be linked to this accident repair. The front buffer plank now carried by 4150 is clearly stamped 9006. It so happens that 'Dukedog' 9006 was withdrawn in August 1948 and so was probably at Swindon Factory for cutting up when 4150 was under repair. Recycling was very much a GWR practice and 4150 obviously needed a new buffer plank at the time.

Unlike 5022, which was withdrawn and cut up in 1963, 4150 is the lucky one, having survived into the current preservation era via Barry scrapyard and soon to see active service again, hopefully without further incident.

Sponsorship Update.

Last year we asked for sponsorship to help with funds in anticipation of our boiler going to Bridgnorth boiler shop for completion. This has proved very popular and the team are very grateful and encouraged by your support. Firstly, we would like to thank all those who have so far been very generous.

The following items have been sponsored.

The whistle. - The copper chimney cap. - Brake valve. - Boiler pressure gauge. - Cab side number plates.

Smoke box door handles. - Safety valve bonnet. - Driver and fireman's seats. - Regulator handle.

Lubricator casting and machining. - Both right hand cylinder pressure release valves. - Brake handle.

Both left hand cylinder pressure release valves. - Rivets for bunker. - Gauge frame.

You all know who you are so thank you.

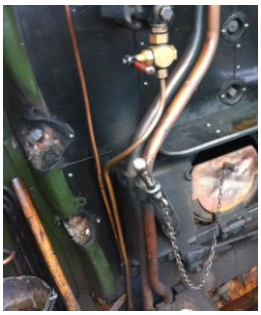
The following items are still available, with some further additions. All items are permanent, very visible and can be identified from the platform. Most items are already in our possession but are selected so sponsors can identify their part of 4150 each time she passes or is waiting at stations. All sponsors receive shares to the same value. All the items are also chosen for their permanency and visibility. This is an exhaustive list and a rare opportunity to sponsor a special piece of a Severn Valley engine and be a part of the final push.

For further information, contact davidmcfall@blueyonder.co.uk

2 Injector valves £75 each - 2 Water shut off valves £50 each - Boiler hand rails £200

Toughened glass £200 for the four cab windows - Rivets for tanks £30

8mm injector £500 - 10mm injector £600 - Buffers front £500 - Buffers rear £500



Two large copper injector feed pipes in cab £300

ATC bell and box £450

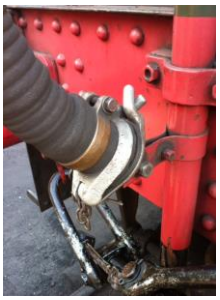
Steam heat gauge £250

Bronze front lance cock £50

Six-cylinder drain cocks 3 on each cylinder available individually or per cylinder £50 each

Shackles front and rear £500 each

Front Struts £300



Vacuum bag fitting front. £70 rear £70

Steam heat valve and bag fitting front £250 rear £250

Lubricator warming cock £75

Vacuum release valve £50

Pep (slacking pipe) valve £50

Firebox doors and handle £500

Blower valve £100

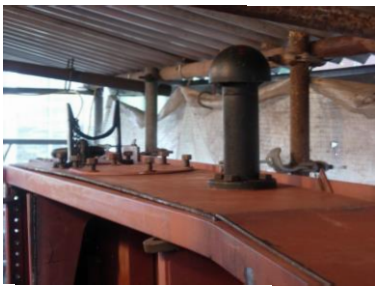
Reversing lever £500

Vacuum gauge £ 200

Drain cock control assembly £300

Cab door hand rails £200

Snifter valves behind steam pipes £50 each



Water tank mushroom vents £ 50 each

Tank filler £75 each

Please note that photographs referred to in the Engineering Report can be found on page 9 and were taken by John Whitcomb and Tony Summerton

ENGINEERING REPORT – John Whitcomb

The start of 2015 saw a number of finishing touches being made to the sidetanks. Strengthening collars for the large diameter through pipes, by means of which the water feed pipes pass through the tanks up to the clacks and boiler, were acquired and drilled, and new footsteps were fabricated, two for the front of the tanks, and a further five for the bunker. As mentioned in the Treasurer's Report, we have acquired a high capacity MIG/arc welder with a view to welding the interior angles and sheets of the tanks and bunker, and this was used for the first time on welding the footsteps into position. After considerable experimentation, a solution was found to the problem of providing a 'grippy' tread for the footsteps, by drilling small holes in the steps and putting in ¼" rivets, countersunk on the base, with the rivet heads providing the tread ***(see photo 1).*** Strengthening plates were acquired for the tank lifting eyes, and also for the area at the cab end of the tanks where the balance pipes which transfer water to the bunker are attached. Such is the weight of these cast iron balance pipes that stiffening plates are required both above and below the bunker base, of 10mm and 12 mm thickness respectively, giving a total of 28mm of steel to bolt the balance pipes to. Similar plates are positioned in the base of the bunker.

Once fabrication of the tanks was complete, attention returned to the bunker, and with great cooperation and assistance from the Wagon Department a plan was devised for moving the components of the bunker piece by piece off the loco and up to the Goods Shed where it's been possible to do the final riveting and welding, well away from the houses next to our main working area. There was much debate about whether the bunker should be sent away to a contractor for this work to be done, or whether we needed to wait until it arrived at Bridgnorth and have it done purely as a contract job. Either of these would have been pretty expensive, and would have eaten into the funds we've got reserved for the upcoming boiler overhaul. The other big advantage is that the job is being done in stages under our control and with the opportunity between riveting sessions to get plenty of paint on and ensure the joints are well sealed before we end up with a very unfriendly and almost impenetrable box! We have been extremely fortunate to acquire over 3,000 rivets, enough for both tanks and bunker provided we don't waste too many, from an old-established company in the Black Country which used to supply rivets to Swindon and who have been very generous to us in resurrecting their old equipment and giving us a very good deal.

The first rivets to go in were the 40 or so rivets which attach the outer angles to the bunker base. These are complicated by the fact that they have to be countersunk under the base so that the bunker sits flat on the frames and can be slid around if necessary, and so they needed to be riveted with the bunker base held vertically upright. Our initial attempts were unsuccessful in that the countersinks weren't properly filled and some of the rivets didn't sit very well on the angles, but a second go proved much better, and the base was then able to be laid down flat for the rest of the bunker to be reconstructed. Two further sessions have added over 750 rivets, with around 250 still to go, mostly on the large front sheet, in a final session scheduled for February. Following on from the riveting, the angles and platework on the bunker base have been seam welded in place using our new MIG welder, but welding of

the baffles and final welding of the coal plate will probably have to wait until the bunker is firmly bolted down onto the loco frames to prevent any possibility of unwanted distortion. It must have seemed at first as though we were going backwards as the bunker was dismantled and taken down from off the loco frames, but it is great to see it now coming together again in one piece. It is currently on rails such that it can be slid out from under the goods shed and craned back into its rightful place on the loco ***(photos 2, 3 and 4).***

Whilst we haven't had to buy any more platework for the tanks in 2015, we have taken delivery of a very substantial chunk of steel in the form of the stretcher plate which braces the frames underneath the cab floor just behind the vacuum cylinder. This hefty plate is 20mm thick but it sits in a position which is very vulnerable to attack by water, ash, coal dust etc., and the old plate had become heavily corroded over the years. The angles which attach this plate to the loco frames are of necessity unusually large, and we've been lucky to be able to acquire two new ones cut to the correct dimensions without having to order a complete 6 metre length. Holes have been drilled for the water delivery pipes which are attached to the stretcher and for brackets which support the vacuum and steam heat pipes underneath it – a bit of a challenge for our trusty magnetic drill. The old stretcher won't be replaced until the loco goes to Bridgnorth, but at least the new one is here and ready to fit ***(photo 5).***

The tubular cab handrails on the tanks and bunker and boiler top have been replaced and are now straight and unpitted, but the curved ones around the sides and front of the smokebox are yet to be formed – a tricky challenge for even an expert tube bender! Handrails elsewhere are of solid bar, bent appropriately, and these will be tackled shortly. The two end bosses for the handrail on top of the boiler were missing, and Alan Baines has done an excellent job of machining two new ones from solid blocks of steel ***(photo 6).*** A lot of swarf must have been generated! Alan has also machined a large number of dome-headed bolts for securing the tanks, bunker and running plates to the loco frames – a laborious task, but they're just not available off the shelf at Screwfix.

Dave Insull and Ian Bromley have been looking after the front end of the loco and progressing various smokebox fittings, work which Dave describes in the following article, this work has been interrupted last autumn while Dave recovers from his accident – we all wish him well. At the other end of the loco, Carl Jones is machining outstanding cab fitting castings, currently the steam heat elbow which mounts directly onto the steam fountain. Both drawhooks have been removed, for cleaning, de-rusting and painting, and replacement of the rubber discs which act as shock absorbers ***(photo 7).*** This has enabled access to all areas of the dragboxes, for assessment, cleaning up and painting. Both front and rear are in excellent condition, not being in the firing line from water, ash etc. unlike the rear dragbox on a tender engine, and they should remain so after painting and a liberal application of Waxoyl.

Martin Turbutt and his son Sam have been tackling the steam pipe covers, prominent at the front of the engine either side of the smokebox. These were acquired as 41xx pattern, but a considerable amount of modification has proved to be necessary to secure an accurate fit. Getting intersections between curved surfaces in sheet metal right is notoriously difficult, and much cutting and welding has been required ***(photo 8).*** Terry Howes, our ace improviser, has made, amongst other things, a brilliant jig for forming the radiused edges of the large cylinder end-covers, a task which we had assumed would have to be a contract job ***(photo 9).*** Other current work includes fabrication of the crinolines which will support the boiler and firebox cladding, making good use of the scaffolding framework we constructed round the loco some time ago. A significant acquisition during 2015 was an 8mm (driver's side) injector to go with the 10mm injector we already have. The 10mm injector does, however, have a certain amount of fine cracking in the casting, and so we decided to join an order for new castings of 10mm injector bodies being organised by Tyseley Locomotive Works.

Attention is turning increasingly to the forthcoming boiler overhaul, and in this connection we have recently acquired from the National Archives at Kew a copy of the Boiler History Card for 4150's current boiler, No. 5895. This makes fascinating reading, and gives an insight into the work involved in maintaining boilers for the Great Western's, and subsequently British Railways', steam fleet. Our boiler, a Standard No. 2, was built in September 1939, an auspicious time indeed, at a recorded cost of £878. The History Card records dimensions for the barrel, the 'casing' (outer firebox), and the firebox, plus the heating surface at a very precise 1348.95 square feet. It also records meticulously the source of the steel and copper used, both initially and in subsequent repairs, no doubt for quality control purposes. When first built, the 218 1 5/8" diameter small tubes, for example, were from a company called Talbot Stead, while the six 5 1/8" flue tubes in which the superheater elements are located, referred to throughout as "Supers" were from Tubes Ltd. A manuscript addition refers to 36 "2nd hand" tubes at 1" diameter, which presumably relates to tubes for the superheater elements (though you might only expect 24 of them – bit of a mystery!). The steel for the barrel and casing came from G.K.B., Parkgate and Appleby Frodingham, while much of the firebox copper came from J Bolton and Sons.

Most importantly for us, the locos on which the boiler served are all recorded, along with the mileages covered. Our boiler was set to work in November 1939 on 4135, a Pontypool engine, and removed in July 1945 after 175,735 miles. Subsequent locos were 6154 (5/46 to 12/48, 63,800 miles), 6122 (8/49 to 1/55, 128,350 miles) and 6168 (4/55 to 3/62, 133,710 miles), before it was ultimately fitted to 4150 in October 1963. Detailed recording ceased in 1963, so no further mileages are available. So our boiler seems to have been used exclusively on Large Prairies, which immediately raises a question mark, in that we have always assumed it had started life on one or more 4-4-0's because of the cut-off handrail bosses which are clearly evident on the sides of the barrel and firebox. These would have been needed for the handrails on a tender engine, but would be in the way of the tanks on a tank engine. Maybe the boiler was constructed with the intention of it being used on a 4-4-0, but circumstances changed - the onset of war might have led to changed priorities, or maybe there was a shortage of appropriate Number 2 boilers at the time 4135 was about to be returned to traffic. Whatever happened at the time, it seems that our boiler is not quite as old as we thought it might be.

Maintenance was evidently at a minimum during the war, with just 10 small tubes replaced at Caerphilly in March 1942. In a major overhaul at Swindon in March 1946, all small and flue tubes were replaced with new, and the boiler received all new stays (454 copper and 596 steel). After that, all the tubes were replaced at regular 3-yearly intervals at either Swindon (1949) or Stafford Road (1952, 1955 and 1958), after which there was a four and a half year gap before its final overhaul at Swindon for 4150. The 218 small tubes were always replaced with new from named suppliers, but when the larger flue tubes needed to be replaced, the replacements are invariably described as 'second hand'. This practice was clearly not always successful, as the six second hand 'Supers' installed at Stafford Road in September 1958 had to be replaced at Old Oak Common Shops in January 1959 with another six, the source being recorded simply as 'Swindon'.

As you might expect, the major overhauls when the boiler was taken off the loco show a progressive increase in the amount of work required. In 1946, no platework was required, but in 1949 the inner firebox received a new copper tubeplate and backplate and new ¾ copper sideplates, while the casing needed new steel ½ sideplates. In 1955, Stafford Road fitted a new "copper box supplied and welded by Swindon", along with new sideplates for the casing. No details are provided of the work done at the last overhaul at Swindon in 1963, which is a great pity, but it was recorded as a major 'out of the frames' overhaul, classified "D".

Boiler testing after overhaul was always recorded, and it's interesting to see that after removal from 4135 in 1946 our boiler was tested for a working pressure of 200psi, appropriate for a 41xx, but then was put on 6154 to work at 225psi. No doubt there was a re-test, but it shows that things didn't always go according to plan, even at Swindon!

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

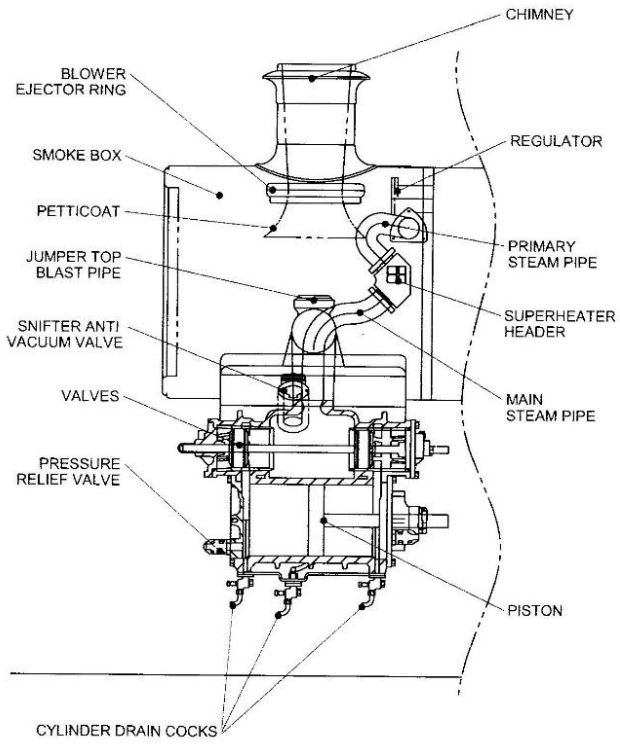
Photo 7

Photo 8

Photo 9

Progress on the Front End – Dave Insull

As most of you may be aware 4150 is making excellent progress, the boiler is due in the boiler shop at Bridgnorth later this year and we have had the opportunity to purchase a new chimney. Efforts are being turned to some of the larger components to start the restoration of the front end including the chimney, the blower ring ***(see photo)*** and now the super heater header. The chimney and blower ring are complete except for piping up, photographs of these can be found on the 4150 website. Work has been concentrated on the super heater header, some re-facing of the metal and reseating of the element holes to create a good seal has been done. The next task is to overhaul the main steam pipe seats; these are heavily pitted after spending many years buried under sandstone on the rock siding at Bewdley. In order to complete this task some new tools are being made, the four sets of steam pipes require repairs and thickness tested before being used. The primary set (which go from regulator to super heater) has been checked for thickness by John Robinson (who is responsible for locomotive records). It has been good news so far with work still needed on the ball ends to seal onto the seats. The regulator box has been opened up and checked, it initially looks good but will need a little fettling to make sure the surfaces are steam tight. All of the above with the exception of the chimney will not be seen after fitting as they will be housed inside the smokebox but each are as important as the more visible parts.



Looking from the cylinder side up there are four pressure release valves and six drain cocks (four cylinder and two middle steam chest). The snifter valves were both overhauled in the early days of the restoration, consequently they only require checking and new studs fixed. The final part of the front end to be overhauled will be the blast pipe, this is in good condition as is the jumper top. This is not a piece of knit wear but a clever device that reduces back pressure on the cylinders and helps reduce the draw on the fire when working hard. Whilst we are making good progress on the front end there is still a significant amount of work needed before completion. As other work on the engine is completed these tasks will be next in line.

Since my last update regarding the progress on the cab fittings I am pleased to report these have now been completed. This leaves the problem with the injectors to be addressed, they are a very important and precise part of the engine allowing water into the boiler against working pressure, to ensure the engine does not run dry.

Work is going well and I'm sure you will agree the day we can see the gleaming engine pull out of the yard for the first time is certainly drawing closer. We are in need of anyone with experience of fabricating both steel and copper pipe work, if you think you may be able to help please get in touch.

4150 Livery Vote - 58 Shareholders participated in the ballot (25%) of which 3 were excluded due to failure to vote for any of the 9 listed liveries.

6 Shareholders voted for a first choice only – 49 Shareholders voted for first and second choices

1. On the basis of a single vote only (first counted) between the one GW livery against all of the BR liveries combined the result is: -

GW livery (No1) – 32 votes: BR liveries (No 2 – 9) – 23 votes

Because the support for a BR livery would be spread across eight options we allowed shareholders to have two votes each to ensure everyone could vote for at least one BR livery choice.

2. On the basis of first and second choice votes counted the result is: -

Livery No	1	2	3	4	5	6	7	8	9
Votes Cast	35	8	0	5	10	3	16	23	4

1. Conclusion: - On both methods of comparison there is a clear preference for the **1947 GWR** livery **(Plain GW Green, lettered GWR)**

Thanks to Dave Massey for his excellent organising of the ballot.

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@4150fund