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Russian/Soviet Airborne ECM (equipment and tactics)

<http://www.acig.info/forum/viewtopic.php?f=7&t=497>

Re: Russian/Soviet Airborne ECM (equipment and tactics)

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by **nastle**

Posted: **Tue Apr 27, 2021 3:38 am**

What kind of jamming capability did soviets have in the 1980s against western Airborne or fighter radars ?

Thanks

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Tom**

Posted: **Wed May 26, 2021 2:53 pm**

As of early 1980s: not that much. But by around 1983-1985, their capabilities increased significantly. From that time onwards, the mass of the Soviet air force was custom-tailored to fight the NATO on the Central Front over West Germany, in an all-out (short of nuclear weapons) war. And in that scenario, there was not that much of a requirement for 'specialised ECM-pods capable of countering enemy fighter radars'.

The V-FA was planning to run three major waves of air strikes a day over Western Germany, each including about 1,000 aircraft - and that together with the DA (i.e. 3x1000 = 3,000 aircraft per wave, and that 3x a day).

Every single of the waves in questions would start with Tu-16s and Tu-22s striking targets like early warning radar sites, MIM-14 Nike Hercules and MIM-23 HAWK SAM-sites with Kh-22s and KSR-5 anti-radar missiles. They were to be supported by Tu-16s acting as stand-off jammers and laying chaff-corridors: these were equipped with stuff like SMALTA ECM-systems.

Bombers would be followed by Su-24Ms, which - depending on the situation - would re-strike the same targets, or major ports, or airports. They would be escorted by Su-24MPs and Su-24MRs, which included internal ECM-systems.

...and then there would follow tactical fighters (MiG-27, Su-17, Su-25), which would go for enemy air bases. These were primarily equipped with SPS-141 ECM-pods.

Every of these waves would've been escorted by several regimental-sized formations of MiG-23MLDs (and, later on, MiG-29s). These had no ECM-pods but were supported by a comprehensive IADS and ATMS (with plentiful of redundancy): that means, they didn't need ECM-pods since the Soviet GenStab expected to first destroy the NATO early warning radar stations, then force the AWACS so far away from the battlefields that they would be of minimal use. So, what NATO fighters would still try to confront such waves, would not only be preoccupied trying to hit all the 'hordes' of missiles, bombers, and fighter-bombers heading their way, but would also be disturbed by a heavy volume of ECM emitted by airborne stand-off jammers and (and even more so) ground-based ECM-systems.

Some of efficiency of all of this can be gauged from the Iran-Iraq War, alone because the IrAF operated very much in this fashion from around 1984 (or, was suffering heavy losses whenever not). The Iraqis would deploy Tu-16s and Tu-22s to lay chaff corridors, then saturate Iranian air defences by Mirages carrying Caimans, followed by Su-22s carrying SPS-141s, and Mirages carrying Remoras (for a very detailed reconstruction, please see [here](#)). Now, I have my own doubts about that, but the Iraqis and Soviets say none of Iraqi jets equipped with SPS-141 was ever shot down by an

Iranian interceptor: the reason for my doubts is that this was a 'front-aspect-only' system, i.e. one effective only toward the front of carrying aircraft. And the Iraqis were rarely facing more than two F-14s combined with 1-3 MIM-23 I-HAWK SAM-sites, none of which received any kind of upgrades since 1978.

The few such possible losses are still 'under investigation', which is why it's still hard to say what was truth and what not.

That said, the Iraqis did, occasionally, lose at least one of escorting MiG-23s or Mirages (which usually had the task of diverting attention of F-14s away from an incoming air strike). They have also lost several Su-22s armed with Kh-28s to IRIAF's F-14s (these usually operated ahead and 'to the side' of the major strike axis, as 'Wild Weasels'. That said, this is of lesser relevance because the Kh-28-armed Su-22 couldn't carry the SPS-141 and the Myetel targeting pod for the Kh-28 at the same time. The former was disturbing the work of the later, whenever powered up...

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **crossiathh**

Posted: **Wed May 26, 2021 4:56 pm**

Tom wrote: ↑

Wed May 26, 2021 2:53 pm

... the reason for my doubts is that this was a 'front-aspect-only' system, i.e. one effective only toward the front of carrying aircraft ...

This is true for the MiG-23BN. The SPS-141MVG with the Su-22 is front- and rear-aspect.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Tom**

Posted: **Wed May 26, 2021 5:10 pm**

Yup, and I'm quite certain the SPS-141MVG came into being precisely _because_ of 'few unpleasant experiences from Iraq' of, say, 1982-1983.

Of course, nobody in the WP came to the idea to go explaining to, say, East German or Czechoslovak MiG-23BN- and/or Su-22-pilots, 'you know, you need this "double" SPS-141 because the Iraqi experience was that....'

(....just like no Russian would ever come to the idea to 'brag' around to any of allied MiG-21-pilots things like: '....and this 800-litre drop tank under the centreline of your jet was originally designed by the Egyptians: we simply lifted it as it was....')

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Milos984**

Posted: **Thu May 27, 2021 7:58 am**

Tom wrote: ↑

Wed May 26, 2021 2:53 pm

...

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...

This is a brilliant explanation.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **crossiathh**

Posted: **Thu May 27, 2021 3:59 pm**

Tom wrote: ↑

Wed May 26, 2021 5:10 pm

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What do you mean by double SPS-141?

What I know is that you needed at least two aircraft (MiG-23BN or Su-22) flying about 150-200m apart, each with a single SPS-141 system or pod to counter monopuls based radar and missiles. So, while a single SPS-141 was good to counter the F-4 you need at least two SPS-141 in your strike group to counter the F-14. The SPS-141MVG also had an additional program to counter the TWS mode of a radar and a mode to trick incoming radar missiles if you were in about 150-250m above ground.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Milos984**

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I check this, while back from office, but if I understand that SPS-141MVG has front side, back side emitters.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Tom**

Posted: **Thu May 27, 2021 4:39 pm**

With double I mean the SPS-141-variant that could emit towards front and towards the rear. That's at least what I know about the MVG - which was never exported to Iraq, though: the only option was for one jet in the pair to have it pointing towards the front, and the other towards the rear.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **crossiathh**

Posted: **Thu May 27, 2021 5:06 pm**

Tom wrote: ↑

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I see. With the SPS-141MVG the pilot has to select which direction. There is a switch in the on the lower right side of the front panel.

However, I was not aware that the Iraq never did receive the pod. What about the SPS-141M pod for the Su-22?

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Tom**

Posted: **Thu May 27, 2021 5:54 pm**

They called it the SPS-141, and it only had antennas pointing forward. As mentioned above: later on, they began installing some of these rearwards, to improve protection in that direction (with fins removed, of course). So, no idea if it was the SPS-141M or else.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **crossiathh**

Posted: **Thu May 27, 2021 9:43 pm**

SPS-141M is the wrong designation. The SPS-141V (СПС-141В) is the correct one. It is the predecessor of the SPS-141MVG and is unidirectional.

Here a picture:

https://flibusta.site/i/74/502674/img_77.jpg

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **Tom**

Posted: **Tue Jun 01, 2021 8:16 pm**

AFAIK, nope: that's not the one described by the Iraqis. They've had the well-known version, but with antennas only on the front side.

Re: Russian/Soviet Airborne ECM (equipment and tactics)

by **nastle**

Posted: **Fri Jun 11, 2021 5:12 am**

Tom wrote: ↑

Wed May 26, 2021 2:53 pm

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That was a very comprehensive and brilliant post Tom ! Thanks

Just to clarify the airborne standoff jammers are the An12 Blinders and Badgers ? Also the ground based jammers were mobile so they could keep up with the moving frontline ?