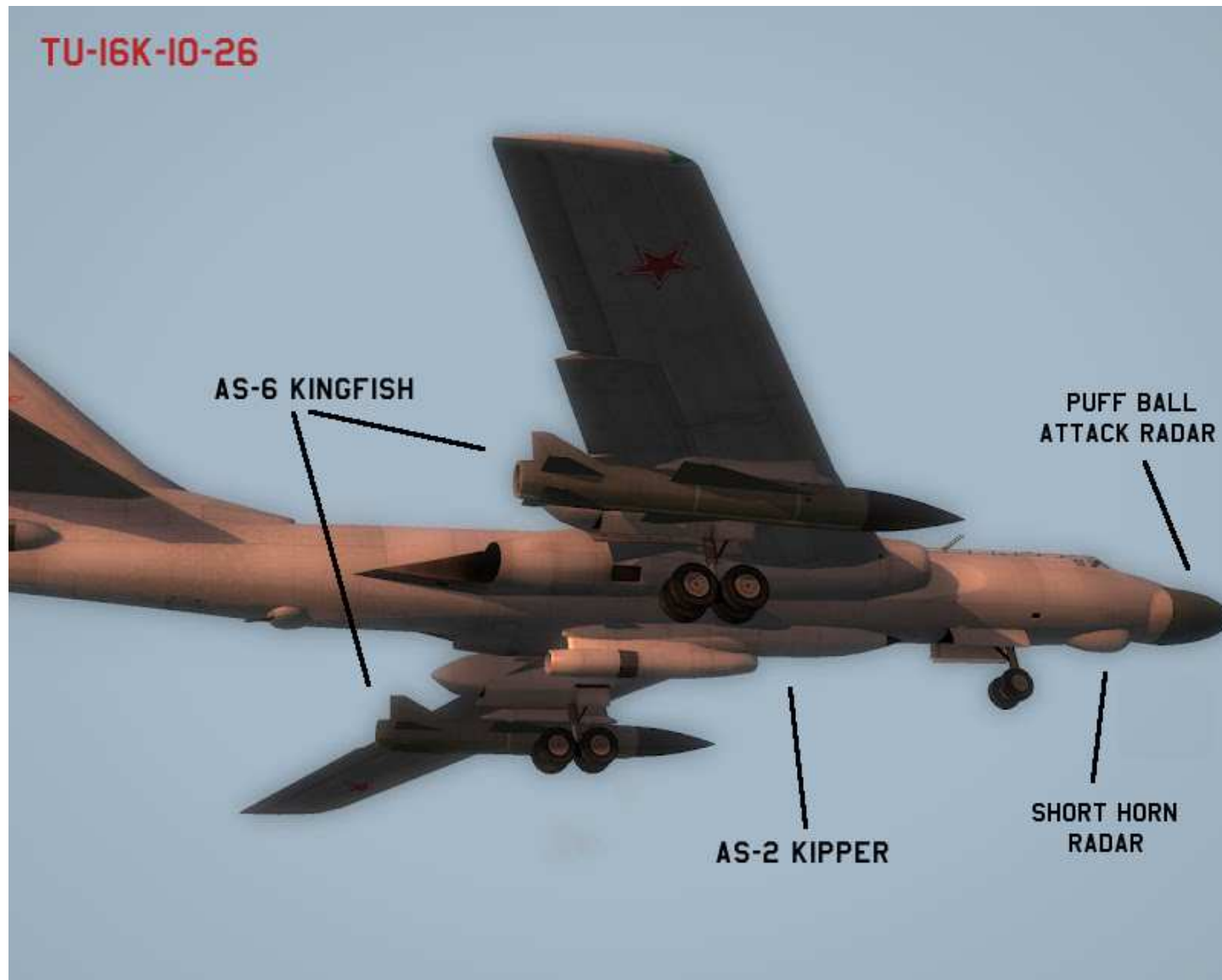
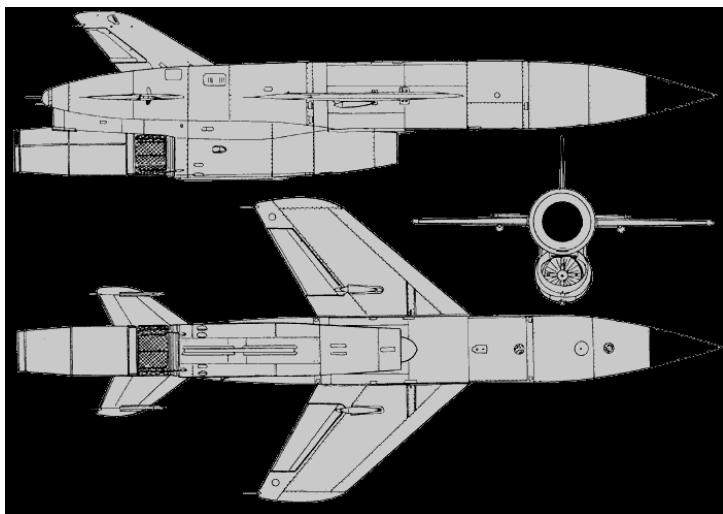


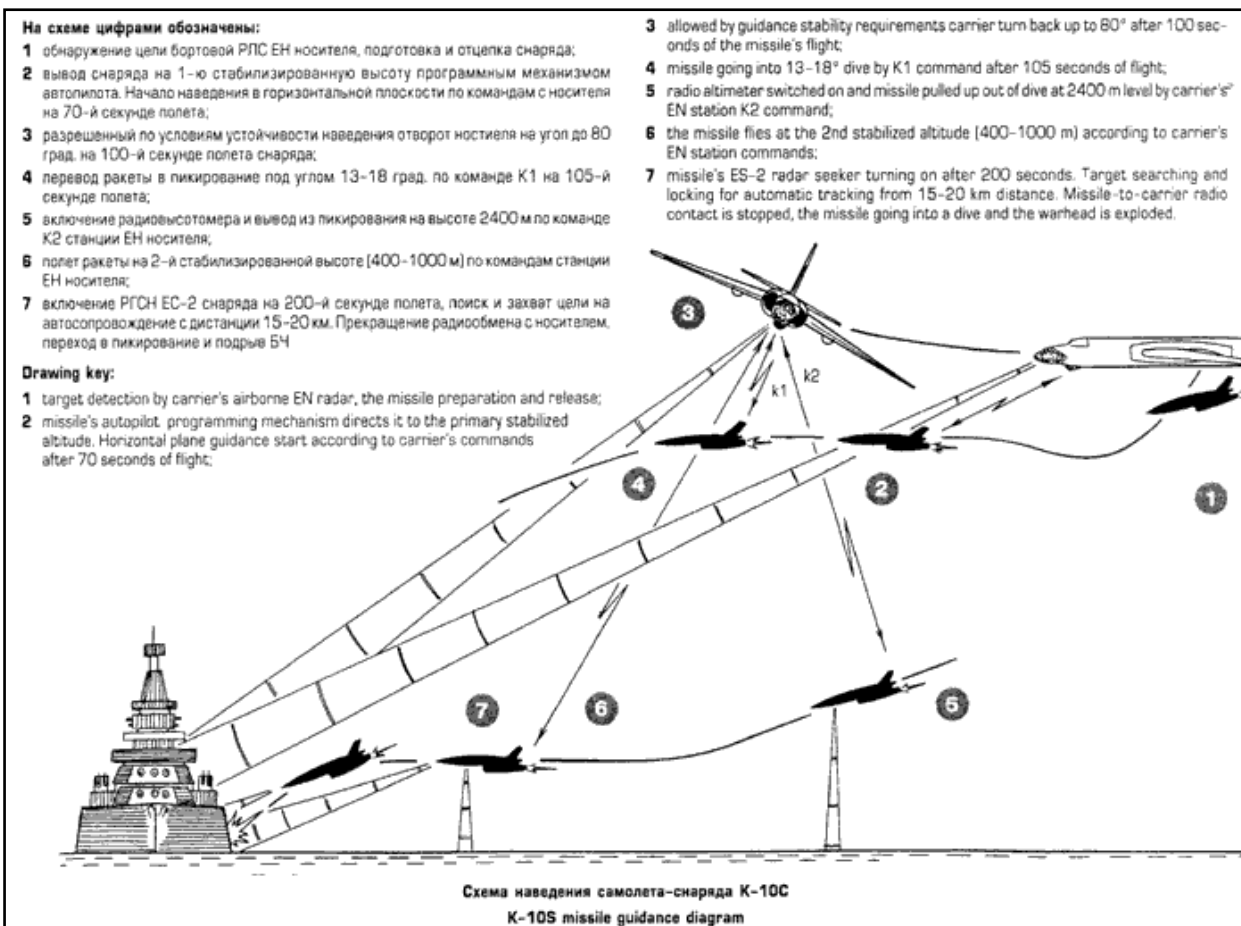
SF2:NA SOVIET BOMBERS AND CRUISE MISSILES REFERENCE GUIDE *(WIP)*



AS-2 KIPPER (KS-10S)

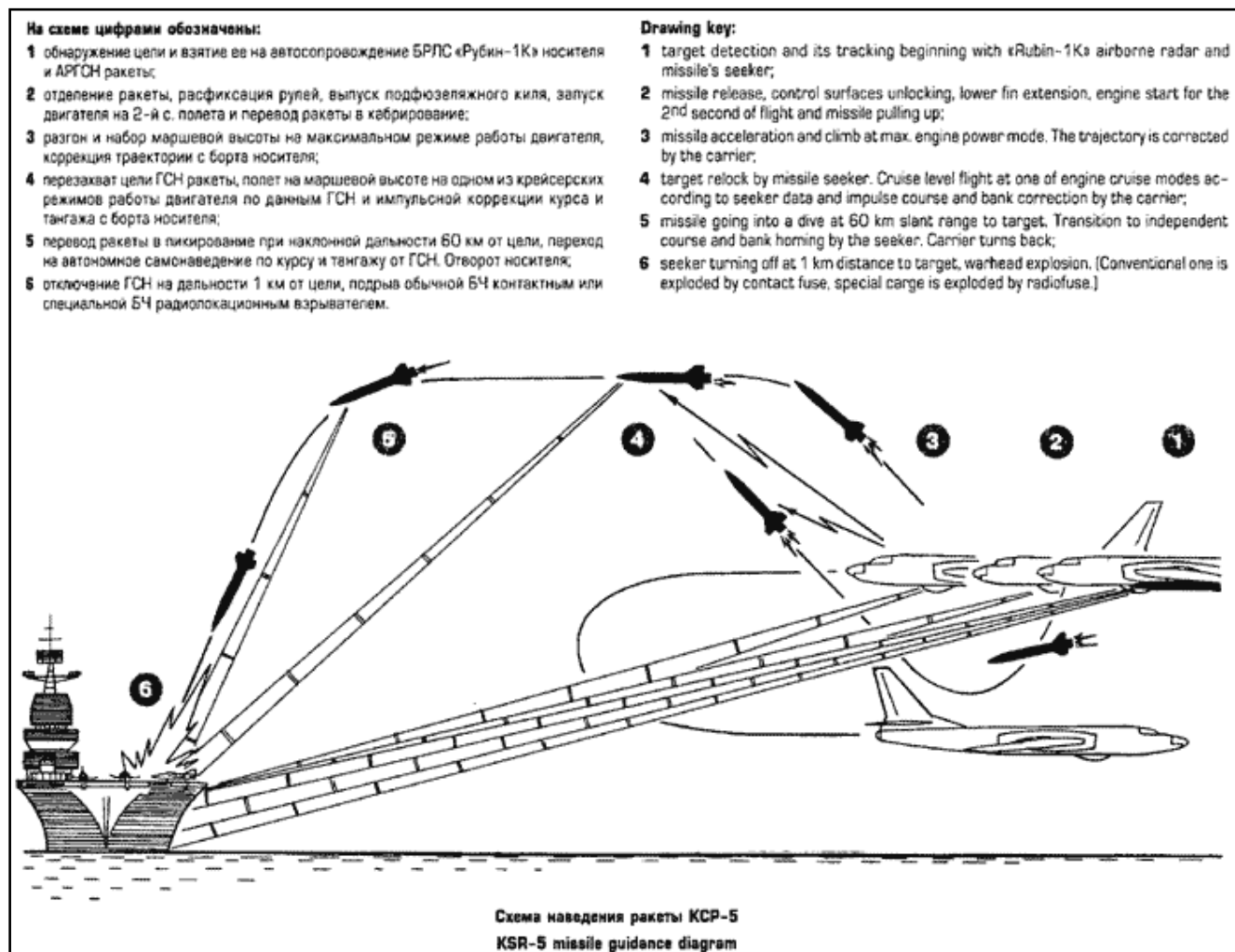


The AS-2 air-to-surface missile is a supersonic, turbojet-powered, low-level run-in, cruise missile with a range of 30 to 100 nm. The K-10S missile (Article 352), developed especially for the Tu-16K-10 (Badger-C) as an anti-ship weapon, was in October 1961, together with that aircraft certified for ordnance. One K-10S missile is suspended from the aircraft, under the middle section of the fuselage. It carries either a conventional or a nuclear 2200-lb warhead. The missile weighs approximately 9120 pounds. For guidance, it uses a preprogrammed autopilot for launch and climb, an autopilot with command correction for mid-course flight, and active radar for terminal flight. The guidance system combines inertial guidance during the initial flight stage and active-radar homing close to the target. The missile can carry a nuclear warhead. It has a CEP of 150 ft when used in an anti-ship role and a CEP of 1 to 2 nm when used against land targets. [Ref: globalsecurity.org]



AS-6 KINGFISH (KSR-5)

The Kingfish was essentially a scaled down AS-4 Kitchen, with less range and launch weight, but similar performance and lethality. It used the Isayev S5.33 engine, rated at 7,100 kp, based on the S5.44 in the Kitchen, and used similar airframe construction and inertial, active radar and anti-radiation guidance systems.



The baseline missile was equipped with a VS-KN active radar seeker, a BSU-7 autopilot, and a 700 kg 9-A-52 shaped charge warhead. The internal tanks carried 1010 litres of AK-20P oxidiser and 660 litres of TG-02 fuel. The KSR-5P anti-radiation variant used a VSP-K anti-radiation seeker and BSU-7N autopilot, entering production in 1973.

The Kingfish was carried by Tu-16K-11-26 Badger G equipped with the Leninetz Rubin-1K Short Horn attack radar under nose, and the Tu-16K-26, Tu-16K-10-26, and Tu-16K-10-26B Badger C (Mod) variants. The Leninetz Rubin-1KV Short Horn attack radar was retrofitted.

Some Badger Gs were also retrofitted with the Rubin-1M or ME with a much enlarged antenna/radome assembly under the engine inlets, this arrangement doubling search range to 240 nautical miles.

The KSR-5 was carried under one wing on the BD-487 adaptor, the missile being that much heavier than the Kelt that only one could be carried on a typical profile. [Ref: ausairpower.net]

AS-4 KITCHEN (KH-22)

The mighty Kh-22 (AS-4 Kitchen) was the weapon which stimulated the development of the SPY-1 Aegis system. Designed during the 1960s for dual role use as a nuclear armed standoff weapon, and as an anti-shipping missile with either radar or anti-radiation seekers, the Kh-22 remains in service as the primary armament of the RuAF's residual fleet of Tu-22M3 Backfires. While the Tu-95K-22 Bear G was equipped to carry up to three Kh-22s, its progressive retirement has limited use to the Backfire.



На схеме цифрами обозначены:

- 1 захват цели РЛС носителя и АРГСН ракеты. Пуск и отворот;
- 2 расфиксация рулей и запуск ЖРД;
- 3 разгон и пологий набор высоты;
- 4 полет на маршевой высоте 22500 м, управление автопилотом по 3-м осям и по ГСН (курс и дальность). Двигатель на режиме поддержания скорости;
- 5 для ракеты Х-22Н — полет на одной из заданных маршевых высот в диапазоне от 12000 до 22000 м. Управление — программируемый автопилот и АРЛГСН;
- 6 выключение двигателя и перевод ракеты в пикирование под углом 30° после достижения определенного угла отклонения луча ГСН;
- 7 подрыв БЧ по данным ГСН или при контакте с целью.

Drawing key:

- 1 target lock is made by carrier's radar and missile's active radar seeker. Missile launch and carrier turn back;
- 2 missile's control surfaces unlocking and liquid-propellant engine start;
- 3 missile acceleration and flat climb;
- 4 22500 m cruise level flight. Three axes control by autopilot and control according to direction and range by the seeker. Speed sustaining engine mode;
- 5 for X-22N missile: one of assigned from 12000 m to 22 000 m levels flight. The missile is controlled by programmed autopilot and active radar seeker;
- 6 the engine is stopped. The missile having attained specified seeker beam angle goes into 30° dive;
- 7 warhead explosion according to the seeker data or by target mechanical contact.

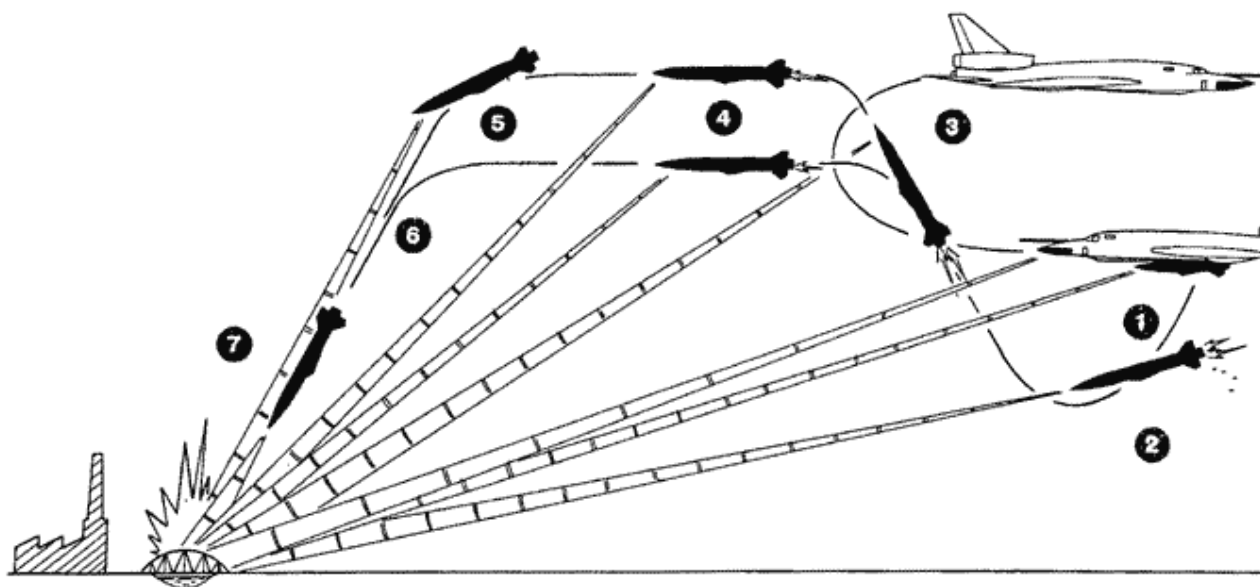


Схема наведения ракет Х-22 и Х-22Н
X-22 and X-22N missiles guidance diagram

The Kh-22 is a formidable weapon. Powered by an Isayev R-201-300 / S5.44 liquid rocket delivering 83 kN full thrust and 5.9 kN cruise thrust, it is claimed to exceed 4.6 Mach in cruise at 80,000 ft AGL. Around 3 tonnes of TG02 fuel and AK-20K oxidiser are carried providing a cited range between 145 NMI (270 km) and 300 NMI (550 km), subject to variant, profile and launch speed/altitude. The engine uses gas generator driven turbopumps and a central power generator to power the onboard avionics and hydraulics. [Ref: ausairpower.net]

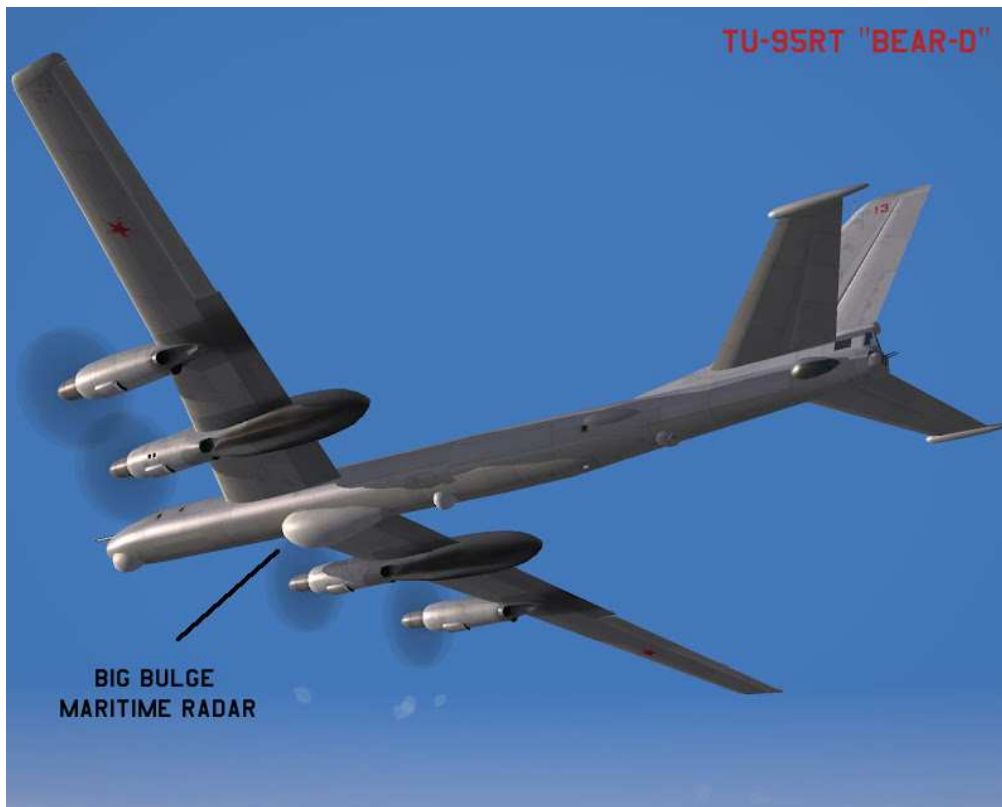
TU-22M3 "BACKFIRE-C"

AS-4 KITCHEN



TU-95RT BEAR-D

A much more ambitious conversion was the maritime ISR and targeting variant designated the Tu-95RTs (Razvedchik - Tseleukazatel' = Reconnaissance - Targeting) or Bear D, which entered service in 1964 and was identified by Western intelligence in 1967. While the Bear D was derived from the Bear A airframe, it was extensively modified for this role and carried no offensive weapons, but retained the ventral barbette, tail guns and Box Tail tail warning radar. Some Bear Ds are also claimed to have had their tail turret replaced with a fairing housing the SPS-151 jammer in an arrangement similar to the Bear G.



The Bear D was equipped with passive and active targeting sensors intended to provide over-the-horizon targeting for submarine launched anti-ship missiles. The passive detection suite included the SRS-6/7 'Romb 4' series ELINT receivers, Kvadrat ELINT analysis receiver in the aft bomb bay, and the Vishnia SIGINT receiver system, all used to locate and identify the radar and communications emissions of Western warships. The passive ELINT package was largely common with the dedicated Il-20 Coot-A electronic reconnaissance and intelligence gathering aircraft.

The active sensor package was more ambitious and centred on the large Kvant Research Institute MIQPC-1 «Успех» / MTsRS-1 Uspekh-1A or 'Big Bulge' maritime search and targeting radar system, located in a large radome under a rebuilt bomb bay. The I/J band Uspekh-1A is credited with a range of about 215 NMI (400 km) against maritime surface targets, it was later replaced with the improved Uspekh-U. The Bear A's Short Horn attack radar was replaced with a steerable datalink antenna for missile guidance, under an ventral nose enlarged radome. [Ref: ausairpower.net]