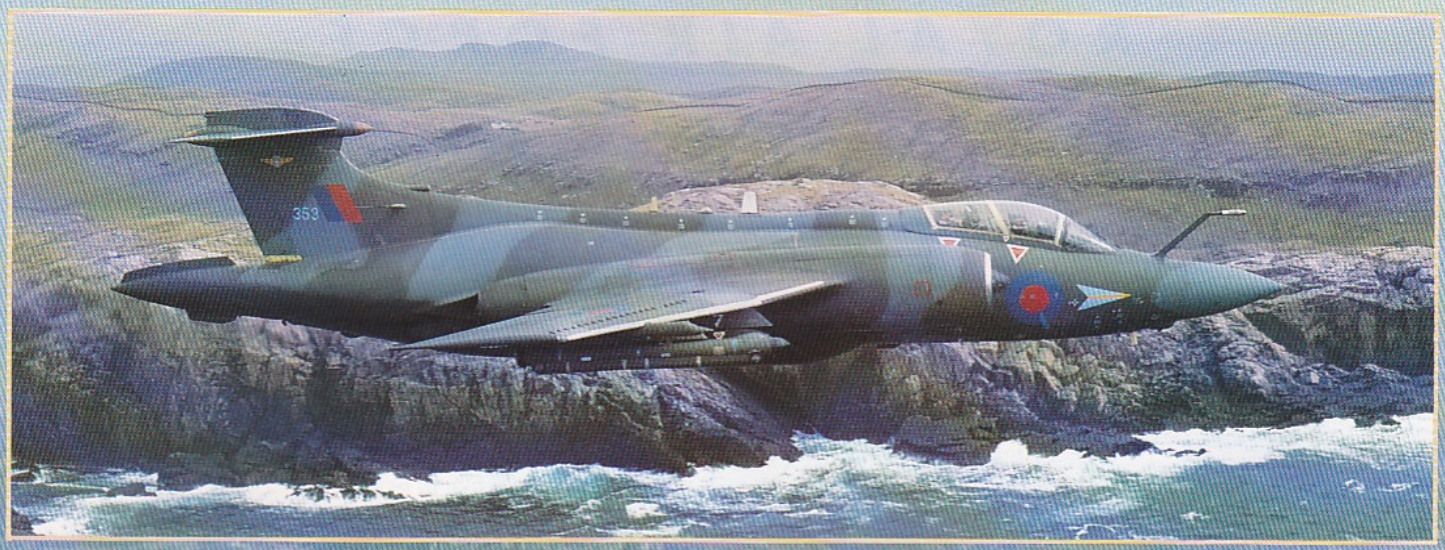

Main picture and left: *Flying fast and low, a Lossiemouth Buccaneer hugs the Scottish coastline as it approaches the target area.*
Lindsay Peacock

GOING BANANAS

BUCCANEERING WITH 208

Lindsay Peacock

"Bananas, bananas...."
The above is perhaps more reminiscent of the kind of remark one might reasonably expect to overhear at a greengrocer's convention but this rather cryptic message actually has nothing to do with the desire to sell fruit. Instead, for those whose job it is to fly the Buccaneer, it actually indicates that a target lies exactly 25 miles ahead. I was hearing it courtesy of No 208 Sqn and Flt Lt John Tait, with whom I was getting a taste of the maritime strike/attack mission as performed by the Buccaneer.

Being stuck in the back of any fast or fastish jet can be an intimidating experience at the best of times, but when that jet is a Buccaneer which is zipping along at a speed that exceeds 600 mph barely 100 ft above the waters of the Pentland Firth, it can also be a wonderfully exhilarating one. For John, of course, such activity is an almost daily event and his prime concern is that of 'doing the business', since somewhere ahead of us lies Cape Wrath and the as yet unseen target – the objective of our simulated LGB (Laser-Guided Bomb) attack.

A few hundred yards away to our left I can see another Buccaneer, its bulky shape partly obscured by a shroud of vapour, for the atmosphere at this sort of altitude is usually moist and the 'Bucc' is well-known for the habit of towing its own cloud around with it. Half-turning to look behind, I see that the wings of our aircraft are also coated with a grey sheet, before settling myself in readiness for the pop-up manoeuvre that presages 'weapons release'.

Barely two minutes after the target identification call, we are into a four-G pull-up, the pressure coming on fairly smoothly as John hauls our aircraft into a climb. Looking across to my left, I see the Buccaneer piloted by 'Classic' formation leader, Flt Lt Damian D'Lima, also rising swiftly although it disappears abruptly from my field of view and is replaced by sky as we rotate through about 90° and begin our egress. Had this been a real attack, just four seconds into the climb a clutch of four or eight LGBs would have been tossed towards the target, which itself would have been designated by another pair of laser-equipped Buccaneers flying an identical course and speed just a few seconds behind us.

Today, it is purely an exercise and there are no bombs, which is just as well for the unsuspecting ship that lead's navigator, Flt Lt Phil Walters, has selected as a target. There's also no second pair of Buccaneers to 'illuminate' it with laser energy during the final moments of the bombs' flight. Nevertheless, the egress manoeuvre is executed as if it is 'for real', John banking hard right immediately after 'weapons release' and holding four-G as we turn away and drop back down towards the security that lies at the 100ft level. In the back, I concentrate on doing nothing more energetic than sweating until the G-force subsides but it still seems to take an inordinately long time before the pressure comes off.

Subsequent conversation with Phil Walters reveals that I was not the only one to experience a few uncomfortable moments during this phase of the mission. In his case, though, the problem was more to do with finding the target on radar and he admitted to slight concern about the possibility of having mistaken a rain squall for a ship. This, by all accounts, is not unknown with the Blue Parrot radar. which has an unwelcome tendency to 'paint' heavy shower activity and there was certainly plenty of that in the vicinity of Cape Wrath. As it turned out, his anxiety was unfounded, for our target was actually 'hiding' behind a shower which intervened at a crucial time but which did not prevent us from

executing a successful 'attack'.

Training sorties such as the one I joined have been part and parcel of the daily routine for the Buccaneer crews at Lossiemouth for many years now and there can be little doubt that the Buccaneer itself is particularly well-suited to the maritime strike/attack mission. That, after all, is what it was designed to do and that is what it still does best, even though it is now less than two years away from honourable retirement.

When it comes to building warplanes, it is no over-exaggeration to say that naval aviation 'breeds 'em tough', for it is a prerequisite that a carrier-borne aircraft must be rugged if it is to withstand the stresses and strains that are associated with repeated catapult launches as well as landings that are more akin to 'controlled crashes'. For all that, in terms of sheer toughness, there are probably few machines anywhere that can compare with the Buccaneer, which was designed for the Fleet Air Arm (FAA) but which has spent most of its career with the RAF.

Old it may be, but there is plenty of evidence to support this contention, recent studies having shown that it is actually somewhere in the region of 16 times as strong as the original requirement laid down. That is one reason why it has been dedicated to maritime operations for much of its life and it is also an influential factor in persuading many Buccaneer crew members to bemoan the type's fairly imminent replacement by the much newer and, in theory at least, more potent Panavia Tornado GR1.

It is, therefore, something of a paradox to report that the Buccaneer was initially viewed with a good degree of scepticism when it first entered the RAF inventory back in 1969, ostensibly as a replacement for the cancelled TSR2 and F-111. Once established in service, however, it soon began to win friends and the present generation of aircrew are ardent admirers of Blackburn's brainchild, being full of praise for the special qualities that suit this veteran so well for the maritime

Left: *Buccaneers from No 208 Sqn maintaining tight formation during a low-level sortie.* Below: *A few Buccaneers have recently adopted this low-visibility grey colour scheme.* Lindsay Peacock

strike/attack task.

Near rock-solid stability makes it an admirable weapons platform, whether it be with missiles or bombs, while the brace of Spey turbofan engines give it a sufficiently sparkling performance to outrun most adversaries. That might sound like wimpish behaviour but it should be borne in mind that while the Buccaneer is an excellent strike/attack machine, it is far from being a 'fighter'. As a result, the preferred tactic when facing hostile fighters is to avoid being drawn into combat if at all possible. In simple terms, it makes more sense to run away bravely.

Whether you prefer the official name of Buccaneer or the less flattering epithet of *Flying Banana*, the fact remains that it is now in the twilight of a service career that began with the FAA as long ago as 1961. As of now, it serves with just two units at Lossiemouth, specifically Nos 12 and 208 Sqns. Until recently, there was a third, No 237 Operational Conversion Unit (OCU) having been responsible for training but the limited aircrew requirement that now exists is being satisfied by the Buccaneer Training Flight, which operates as a department of No 208 Sqn.

During the next 18 months or so, both of the remaining squadrons are scheduled to retire their remaining Buccaneers (and Hunters), but the fates that await them are expected to be rather different. Unless there is a change of plan in the meantime, No 12 will continue in existence with the Tornado, obtaining aircraft from No 27 Sqn which is set to move to Lossiemouth in April 1993 as a prelude to being 'renumbered' as No 12 on 1 October 1993. The latter date should also witness No 617 Sqn's arrival at Lossie and this will clear the way for No 208's disbandment and the end of the Buccaneer era on 1 April 1994.

As far as the missions performed by the dwindling Buccaneer community are concerned, it is the maritime applications that are of prime interest here. Best known among them by virtue of giving the Buccaneer an opportunity to test its mettle in combat during the Gulf War of 1991 is that of laser designation, which is equally effective against land or sea-based targets.

More familiarly referred to as 'spiking' – a corruption of the name Pave Spike allocated to the Westinghouse AN/AVQ-23 target-designating system – the service provided by the 12-aircraft contingent which undertook combat operations in Operation *Desert Storm* was of enormous value in allowing Tornados from Muharraq and Dhahran to perform precision bombing attacks on a host of targets that included bridges, hardened aircraft shelters and weapons dumps. In the final few days, when the aerial threat was entirely eliminated, the Buccaneer also joined in as a bomber, using Pave Spike to 'self-designate' targets – in this fashion, it was eventually responsible for dropping just under 50 examples of the 1,000lb laser-guided bomb.

In the Gulf War of course, the 'spiking' only ever involved land targets. However, the degree of precision is such that it is of considerable value to maritime operations, either against lightly defended 'low-value' shipping targets which don't merit the attentions of the more sophisticated and more expensive Sea Eagle missile or against targets which have been the subject of a Sea Eagle attack and which are, for lack of a better term, electronically 'blind' and thus ill-equipped to defend themselves.

Mission planning for No 208 Squadron personnel. From left: Flt Lt John Tait, Flt Lt Damian D'Lima and Flt Lt Phil Walters. Lindsay Peacock

A key advantage to the LGB is that it has sufficient 'clout' to sink a ship, unlike Sea Eagle which till usually only succeed in crippling its target. The reverse side of the coin is that the LGB has to be delivered from relatively close range, placing the Buccaneer and its crew well within the lethal threat zone that surrounds a modern and well-armed warship. In view of that, it appears reasonable to assume that the two weapons are viewed as complimentary when operating against 'high-value' targets which are well protected. In such a situation, it is probable that Sea Eagle would be used first to pave the way for the *coup de grace* to be administered by LGBs.

Another mission – and one that was not undertaken in *Granby* – is that of in-flight refuelling, for the Buccaneer is also able to function as a tanker. With the aid of Flight Refuelling Ltd Mk 20C or Mk 20E 'buddy' pods containing a hose and drogue assembly, it is possible to transfer fuel in flight, so extending the already impressive range characteristics by a significant degree. As is the case with 'spiking', in-flight refuelling is a routine feature of peacetime training operations.

Maritime attack is the *raison d'etre* of the Buccaneer force, with responsibility for management of the two Lossiemouth squadrons devolving to Strike Command's No 18 Group, an organisation that also controls the Nimrod patrol communities at nearby Kinloss and St Mawgan in Cornwall. By one of those strange geographical accidents, this has its headquarters at the other end of the country, at Northwood, Middlesex, but basing of the Buccaneers in Scotland was predicated upon the desire to deny easy access to the waters of the North Atlantic via the so-called 'GIUK' (Greenland-Iceland-UK) gap in times of war.

This was one of the prime routes likely to be used by warships of the now-defunct Soviet Union's vast fleet and it is probably fair to say that redrawing of the Eastern European political map has, for the time being at least, reduced the threat from this quarter. But, despite internal wrangling, there is little doubt that some of the emerging nations of the Commonwealth of Independent States (CIS) do possess significant maritime power and the GIUK gap is quite clearly still a strategically important 'bottleneck'. That is why the Buccaneers have remained at Lossiemouth. It is also why the Tornados are going there to satisfy the continuing requirement of No 18 Group and NATO's Supreme Allied Commander Atlantic (SACLANT) for a worthwhile maritime attack capability, even though the amount of effort devoted to maritime tasks is expected to fall significantly.

Only about two dozen of the 110 or so Buccaneers that were received by the RAF are still active, but updating of avionics and other equipment has allowed them to remain a viable and effective resource. Indeed, it appears very probable that they would have remained in the inventory for a few more years had RAF Germany not been much reduced in size following the collapse of communism and the demise of the Warsaw Pact alliance. It was that action which made Tornado available and, in the process, sealed the fate of the Buccaneer.

Surviving examples of the Buccaneer were among those aircraft which were subjected to fairly substantial modification between 1986 and 1989 in accordance with Air Staff Requirement 1012. Apart from the initial machine which was updated at Brough, this programme was accomplished by the BAe factory at Woodford and was originally expected to involve as many as 60 aircraft at a cost of £150m. Defence economies curtailed the extent of the ASR1012 project and it transpired that only 42 Buccaneers were eventually updated – even then, the programme was destined not to be implemented in its entirety, aspects which fell foul of cuts in the budget including plans to fit a head-up display as well as improvements to the radar and electronic counter-measures equipment.

Work that was carried out centred

around installation of a Ferranti FIN1063 inertial navigation system, other features of the Woodford update being a new Automatic Flight Control System, courtesy of Louis Almark Ltd, and new Plessey radio equipment. In the absence of sufficient cash, the original Ferranti Airpass III Blue Parrot radar was retained. However, unlike the 'Norwegian Blue' immortalised by John Cleese, this item of kit was far from dead, provision of an interface between it and the FIN1063 INS allowing them to 'talk' to each other and, in the process, making life considerably easier for the navigator.

In addition, the existing Marconi ARI18228 radar warning receiver equipment was updated to Sky Guardian 200 standard, offering expanded threat coverage through the addition of receivers operating in the E-J frequency bands. Finally, active countermeasures were enhanced, primarily through provision of Tracor AN/ALE-40 chaff and flare dispenser units. Four are normally carried, with two located on the aft underside section of the engine fairings being used for flares while two more on the inner face of each outboard wing pylon dispense chaff – between them, these offer a measure of protection against infra-red and radar-directed missiles.

Looking at weapons, a number of options exist and selection would be made with the likely target very much in mind, the Buccaneer community being ardent adherents to the concept of matching weapons to targets. Mention has already been made of the laser-guided bomb (LGB) and this is the weapon of choice against what could best be called a 'permissive' target – ie one which offers a relatively low margin of threat to attacking forces.

LGBs are invariably carried externally. In the Gulf, a typical load comprised two, but one should recall that the Buccaneer was also carrying the 'Pave Spike' pod and a Westinghouse AN/ALQ-101(V)-10 jamming pod. In the maritime role, with self-defence a consideration that must be borne in mind, a four-aircraft 'package' would typically include two 'designators' with ECM pods and one LGB plus an AIM-9 Sidewinder heat-seeking air-to-air missile. The other two aircraft would each carry a pair of LGBs as well as an anti-radiation Martel missile and an ECM pod. Thus, a maximum of six bombs could be available, as well as pairs of Sidewinder to counter aerial threats and Martel to deal with surface-to-air missile-control radars 'Mixing and matching' like this offers the greatest probability of a successful outcome to the mission, while at the same time minimising the risks involved if the opposition shoots back or can call upon air support.

In addition, of course, the Buccaneer retains the use of the internal weapons bay and this can accommodate up to four 1,000lb bombs or, if greater range is desired, an extra fuel cell containing 440 gallons. As with other weapons systems, peacetime training allows plenty of opportunity to work on bombing skills. The most commonly used devices are the 3kg and 14kg bombs which are normally deposited on ranges at Rosehearty and Tain. Inert and live 1,000-pounders are also dropped from time to time, with No 12 and No 208 joining other squadrons in remodelling Garvie Island, off Scotland's east coast.

For valuable targets, such as a capital ship like a battle cruiser or carrier, Sea Eagle is the preferred option. Introduced to service by No 208 Sqn in early 1986, Sea Eagle has now supplanted the TV-guided Martel and the 60-plus mile range of this 'fire-and-forget' missile allows attackers to engage from a position well outside the lethal threat zone of fixed defences.

A 'Hi-Lo-Hi' mission profile is favoured when employing Sea Eagle, with Buccaneers dropping down to low level (typically around 100 ft) some distance beyond the target vessel's radar line-of-sight in order to approach undetected. Since ships have an annoying tendency to move position, it is necessary to obtain an update on target location prior to launch and the Buccaneer's own Blue Parrot radar is more than adequate for this purpose. Unfortunately, it does have the drawback that it will be necessary for at least one aircraft in the formation to climb and briefly activate its radar, an action that is likely to betray the fact that hostile elements are in the vicinity.

A more stealthy – some might say sneaky – attack is possible with the assistance of the Nimrod which can provide range and bearing data by means of secure communications channels. This might still provide some indications of an imminent attack to an alert enemy but will not offer any clues as to the direction from which that attack is likely to come.

For that reason, it is the most favoured method but regardless of which tactic is employed, Sea Eagle is launched in the general direction of the target or targets, at which point the Buccaneers turn and head for home, leaving the missile to fend for itself. For the cruise phase of flight, an integral autopilot steers Sea Eagle towards the last known position of the target, while terminal guidance is accomplished with the aid of a Marconi active radar seeker device.

The latter is a particularly ingenious piece of equipment and is quite discriminating when it comes to hunting for targets, since it can be programmed to look for the largest objective. That, of course, presents the possibility of all missiles locking on to the same target and it is for that reason that programming options are rather more numerous, Sea Eagle radar possessing the ability to seek targets to either the left or right of the main body of ships, as well as to the front and rear.

Regardless of exactly which vessels the missiles are aimed at, saturation seems to be the name of the game when using Sea Eagle and a strike package might well number as many as six aircraft, each carrying a total of four missiles. In an ideal world, the preferred attack option envisages launching these so that they will converge on the target area from different quadrants, thus compounding the job of the defensive forces.

Typically, attack planning in this situation envisages a 'six-ship' of Buccaneers splitting into two separate three-aircraft elements (known as 'Blue' and 'Gold') with missile launch and approach paths for each element being along two separate axes. If executed correctly, this should result in all 24 missiles arriving in the target area within 15 secs so as to overwhelm the defensive screen. While it is doubtful if all the Sea Eagles will penetrate to their objectives, the chances are that many will and such is the destructive power of modern anti-ship attack missiles that these are likely to wreak havoc on anything they do hit.

When the time comes for the Buccaneer to disappear from the RAF, Sea Eagle will form a new partnership with the Tornado and this is likely to be a very effective combination, albeit one that perhaps possesses rather less character. The 'Bucc' may be long in the tooth now, but in its element – at low level and high speed over the sea – it's still more than able to cut a dash and will indeed be a hard act to follow.

Below (top): *In common with other RAF units deployed to the Gulf, Buccaneers received desert camouflage and a fair share of nose art.* PRM Bottom: *To celebrate its 75th anniversary, No 208 Squadron Buccaneer XN976 was painted in a special scheme.* Lindsay Peacock