

GREAT TITMOUSE

CARD 121

GROUP 2: BIRDS

ORDER
Passeriformes

FAMILY
Paridae

GENUS & SPECIES
Parus major



The great titmouse is the largest of the European titmice. Highly agile, this lively bird entertains bird-watchers with its acrobatic antics as it searches for insects and other food.

KEY FACTS



SIZES
Length: 5-6 in.
Weight: About 1/4 oz.



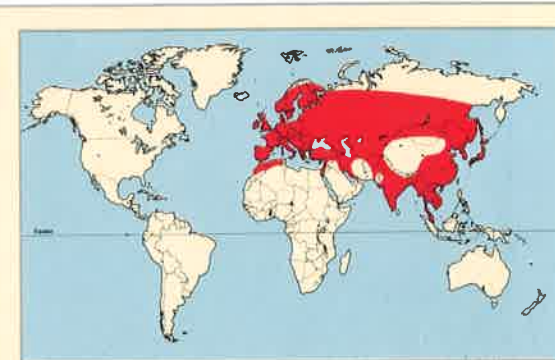
BREEDING
Sexual maturity: 1 year.
Breeding season: Early spring.
No. of broods: 1, rarely 2.
Eggs: Up to 12. White with reddish spots.
Incubation: 13-14 days.
Fledging period: 16-22 days.



LIFESTYLE
Habit: Sociable, forming flocks of 6 or more. Often flocks with other titmice.
Diet: Insects, seeds, and nuts.
Lifespan: Average 2-3 years, but few chicks reach adulthood.



RELATED SPECIES
Relatives include the blue titmouse, *Parus caeruleus*, in Europe and the black-capped chickadee, *P. atricapillus*, in North America.



Range of the great titmouse.

DISTRIBUTION

Found throughout Europe and Asia, from Great Britain and Portugal to Japan and Malaysia, except above the timberline in mountain areas and in desert regions and Arctic tundra. Also found in northwestern Africa.

CONSERVATION

The great titmouse is common throughout its range and is not in any danger of extinction.

FEATURES OF THE GREAT TITMOUSE



Flight: A sequence of rapid wingbeats and short glides gives the great titmouse its "bouncing" flight.



Eggs and nest: The tightly woven nest has an open top. Up to 12 white eggs are camouflaged with reddish flecks.



Plumage: Its brightly colored plumage makes the great titmouse easy to recognize. But in its woodland home, sunlight coming through the trees makes the blue, green, yellow, and black colors merge into the background.

Male: Coloring is brighter and black chest stripe is broader than on the female.



The great titmouse, or great tit, is one of the most beautiful birds in Europe. A relative of the black-capped chickadee, it is easily recognized by its colorful yellow and black plumage. At home in all types of woodlands, the great titmouse is also frequently found in gardens, where it readily moves into birdhouses and picks up nuts and seeds from bird feeders.

FOOD & FEEDING

The great titmouse eats mainly insects and their larvae, which it collects from the leaves and twigs of trees. At times it hammers at bark with its short beak to find food in the cracks. In winter insects are scarce, so the great titmouse eats nuts and seeds, especially acorns.

The great tit is always on the move, flitting from branch to branch in its search for food. Because this bird is heavier than other titmouse species, it keeps to the lower, stronger branches. When foraging in a flock, each bird keeps an eye on its companions. As soon as one bird finds food, the others fly down to share it.

Left: The great titmouse's varied diet includes buds, seeds, spiders, and caterpillars.

Right: The great titmouse feeds on insects that it finds on tree trunks and low branches.



DID YOU KNOW?

- In its search for food, the great tit has learned how to pierce the top of a milk bottle to get at the cream.
- In the 1700s, French kings kept great tits in cages and trained them to do tricks.
- To get food for their hungry chicks, great tits may leave

the nest 1,000 times a day.

- Only one in six chicks survives the first year. Only one in 12 lives to two years.
- It is rare for a bird that feeds its chicks to lay as many eggs as the great tit does. Usually only birds whose young feed themselves lay so many eggs.



BIRDWATCH

The blue, green, yellow, and black feathers of the great titmouse make it easy to identify. But this bird can also be recognized by its noisy call. More than 50 calls have been identified, but the great tit's most common call sounds like

"teacher, teacher, teacher." The great tit will nest in a birdhouse if there is no suitable natural site nearby. It will also visit a bird feeder filled with nuts and can be seen cracking open nuts as large as a hazelnut.

HABITS

The great titmouse usually lives in woods but can also be found in marshes, hedgerows, parks, and gardens. It is very sociable, and in winter it often searches for food in small flocks. Sometimes it is joined by the blue tit and other woodland birds. Feeding in flocks is a safety

measure. If one bird spots a predator, it warns the others. At the start of the breeding season, the male great titmouse becomes aggressive and fiercely defends his territory. As soon as the eggs hatch, however, the birds live together again in harmony.

Right: The great titmouse has a range of songs.



Center: Even after they leave the nest, young great tits may be fed by their parents for several days.



BREEDING

In early spring the male great tit chooses a territory and defends it against rival males. To attract a female, he displays his black throat patch. After mating, the female builds the nest in a tree hole or similar cavity. The male helps by gathering materials. The nest is lined

with a soft, warm layer of moss, hair, and plant down. The female lays up to 12 eggs at a rate of one egg per day. While she is laying and then incubating the eggs, her mate brings her food.

The eggs hatch after 13 to 14 days. Within three or four days, the parents must spend all their time feeding the chicks. Because feeding their young is so exhausting, great tits produce more than one brood only if there is a good food supply. The fledglings leave the nest after 16 to 22 days.

Left: When competing for a mate, the male great titmouse frightens rivals with a threat display.



COMMON SWIFT

CARD 122



GROUP 2: BIRDS

ORDER
Apodiformes

FAMILY
Apodidae

GENUS & SPECIES
Apus apus



The common swift spends almost its entire life in the air. This bird lives up to its name as its long crescent-shaped wings take it to high speeds to catch flying insects.

KEY FACTS



SIZES

Length: About 6½ in.
Wingspan: 16-19 in.
Weight: 1-2 oz.



BREEDING

Sexual maturity: 4 years.
Breeding season: May to July.
No. of broods: 1.
Eggs: 2-3, white.
Incubation: About 3 weeks.
Fledging period: 5-8 weeks.



LIFESTYLE

Call: Noisy. Utters shrill screams and screeches.
Habits: Sociable. Spends most of its time flying.
Diet: Insects caught in flight.
Lifespan: 21 years recorded, but a longer lifespan is likely.



RELATED SPECIES

There are more than 80 species of swift, including the familiar chimney swift, *Chaetura pelagica*, of North America.



■ Summer range of the common swift. ■ Winter range.

DISTRIBUTION

Breeds in northwest Africa and most of Europe except in the far north. To the east its breeding area reaches from Afghanistan in the south to southern Siberia in the north.

CONSERVATION

The common swift has suffered from loss of breeding sites in many parts of Europe, although pairs can increasingly be found in less polluted urban areas.

IDENTIFYING THE COMMON SWIFT

Flight: The swift is a fast and adept flier. It wheels and swoops as it funnels insects into its gaping mouth.

Wings: Long and sickle-shaped. The common swift can alter the speed of its left and right wings independently, enabling it to turn sharply and powerfully.



Eggs: White. 2 or 3 laid between May and July, hatching after about 3 weeks.

Plumage: Overall dark gray-brown, with ash gray chin and forehead.

Claws: Tiny but very strong, on short feet. Able to cling to very small cracks in a cliff or wall.

THROAT POUCH



The swift stores insects in an expanding throat pouch to take them back to its nestlings.

FLOCKING SWIFTS



Swifts can be seen racing noisily over roofs as they prepare for a night's flying.



The common swift spends the winter in Africa, and it can be seen in Europe and parts of Asia from May to July. Although not related, the swift is sometimes compared to the swallow family because of its agility in flight and its habit of nesting on buildings.

HABITS

The common swift feeds in flight and spends most of its nights in the air. It even drinks and bathes without alighting on the ground, landing only to nest or to rest on high perching places. At dusk, noisy flocks utter shrill screams as they circle upward for a night in the air.

With its long, pointed, stiff wing feathers, the swift is well adapted for flight. It hardly uses its tiny legs and feet. But it has strong, sharp claws that enable it to cling to vertical rock faces or walls. In this way the bird can rest on its migratory flights between Africa and Europe.

The common swift's flight combines short glides with very fast wingbeats. The bird can move one wing faster than the other. This ability serves as an important means of steering, since the tail is too short to be

an efficient rudder on its own.

The common swift has an average cruising speed of about 25 miles per hour, which is much faster than that of swallows and martins. As a result, the swift can nest in towns and cities, even though flying insects are scarce there. The swift simply travels widely over the surrounding countryside to find its airborne prey.

Not only are swifts frequently more numerous in cities than swallows, but as a group they are now probably more numerous than they were when Europe was largely covered by forests. One reason is that buildings provide many more nesting sites than the cliffs where they formerly nested.

Above: The swift often flits around old buildings looking for a place to nest.



MIGRATION

In August the common swift leaves Europe to spend the winter in Africa. It returns in April and breeds from May to July. The short breeding period is time for only one brood.

Although the young start the long flight to Africa soon after leaving the nest, common swifts are less likely than many other bird species to die in their first year.

FOOD & FEEDING

The common swift feeds on flying insects, catching most of them in the air at high speeds. It stretches open its tiny bill, which acts as a funnel to draw in the insects. It can store the insects it catches in a throat pouch to take back to the nest to feed its young.

Below: The fledgling may spend several weeks in the nest before it is fully independent.



BREEDING

Common swifts mate in flight, after which they build a nest on a flat surface, either in a crevice on a cliff, in a hole in a wall, or under roof eaves. The nest is a shallow cup of plant materials and feathers that the birds cement with sticky saliva from their special glands.

The female lays two or three

eggs, which both adults incubate. The young are often left uncovered while the parents seek food, but they can survive low temperatures by becoming sluggish to save energy.

The fledging period depends on the supply of food. In bad weather the young may not fly until they are eight weeks old. When the young leave the nest they must be self-sufficient and able to fly for long stretches, as they will be migrating soon.

Left: Even with tiny claws, the swift can cling easily to a cliff when it needs to rest.

DID YOU KNOW?

- The swift's short legs and small feet hamper it from taking flight from flat ground. It cannot raise its body high enough to open its wings.
- The spintailed swift from eastern Asia is thought to be the fastest swift. It can fly

almost 200 miles per hour.

- The African palm swift uses saliva to glue feathers to a palm leaf, then glues one or two eggs to this vertical pad. The parents incubate the eggs by clinging to the vertical surface with their claws.

ECLECTUS PARROT

CARD 8



GROUP 2: BIRDS

ORDER
Psittaciformes

FAMILY
Psittacidae

GENUS & SPECIES
Eclectus roratus



The brilliant plumage of the eclectus parrot provides it with an excellent camouflage from predators in its rainforest habitat.

KEY FACTS



SIZES
Length: 14 in.
Shoulder height: Up to 28 in.
Weight: Up to 16 oz.



BREEDING
Sexual maturity: 3 years.
Breeding season: Varies according to climate; may be almost continuous.
Incubation: 26 days.
No. of broods: 1, possibly more.
Eggs: White; 2 per clutch.
Fledging period: About 85 days.



LIFESTYLE
Habit: Sociable, roosting in large groups of up to 80 birds.
Diet: Treetop seeds, nuts, fruits, flowers, and leaves.
Lifespan: Probably 40-50 years.



RELATED SPECIES
Includes the African gray parrot, *Psittacus erithacus*.



Range of the eclectus parrot.

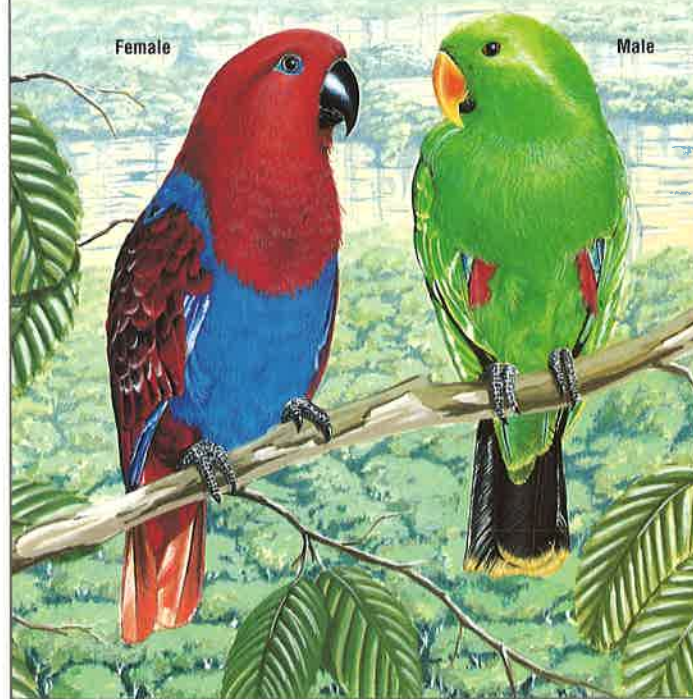
DISTRIBUTION

Mainly New Guinea, Solomon Islands. On some islands, the birds may have been introduced. Also Cape York Peninsula, Queensland, Australia.

CONSERVATION

Has been affected by hunting and land clearing, but in many areas of its habitat, no conservation measures are yet in force.

IDENTIFYING THE ECLECTUS PARROT



The contrasting colors of the male and female parrots' plumage are thought to help them survive in their natural forest habitat, where they may be in danger from birds of prey.

Males spend much of their time seeking food in the treetops, where their bright green plumage blends in well with the foliage. By contrast, females incubating in dark nest holes are less conspicuous, as their red and blue feathers merge with the shadows.

At 6 weeks old, the female chick (left) is more colorful than the male chick (right), who is still a grayish color.

Female chick Male chick



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Strikingly beautiful birds, eclectus parrots live in the lowland rainforests of Pacific islands, such as New Guinea. These parrots are thought to have been introduced to some islands by forest-dwelling natives who kept them as pets.

HABITS

Eclectus parrots are noisy, sociable birds that gather in large flocks of up to 80. They fly very well and can climb trees with ease, using their beaks and clawed feet to grip the branches.

The male eclectus parrot is a stocky, medium-sized bird

with bright, glossy green feathers highlighted with red flashes on its sides and underneath its wings. The female is slightly smaller and has a bright red head, throat, and wings, which contrast with her brilliant blue chest and purple underwings.

FOOD & FEEDING

Like most other parrot species, eclectus parrots are vegetarians. At sunrise, they leave their roosts in pairs or small groups and feed in the tops of tall trees. They eat a wide range of buds, blossoms, seeds, nuts, berries, fruit, and flower nectar.

When kept in captivity, eclectus parrots will eat large amounts of green vegetables in addition to fruits and nuts.

Eclectus parrots are strong flyers and will travel far from their roosting sites in search of food. Large numbers will congregate on fruit-bearing trees.

Above left: Both male and female eclectus parrots have strong, curved beaks adapted for climbing and cracking hard nuts and seeds.

Right: The male's bright coloration helps him to blend in with the lighter parts of the forest (see back cover). He feeds the female when she is incubating eggs.



DID YOU KNOW?

- Newly hatched eclectus parrot chicks are covered with short, thick bristles, which are replaced with fluffy gray down after two or three days.
- Male and female eclectus parrots are so different in color that they were at one time thought to have been two completely different species.
- Of the more than 300 members of the parrot family, only one-third are actually called parrots. Other members are commonly known as parakeets, macaws, cockatoos, and lorikeets.
- Parrots have two claws that face forward and two that face backward; this gives them a good grip when climbing trees.

BREEDING

The eclectus parrot has no regular breeding season. During courtship, the male pursues one female and attempts to get her attention by making excited squawking calls. When she is ready to mate, she selects a nest site in a hole high up in a tall tree trunk. The entrance is usually about three inches across. She chews up pieces of wood with

which to line the nest and makes a soft bed for the eggs.

The female lays two eggs and incubates them without the help of the male. The male visits the nest at regular intervals during incubation and feeds the female with regurgitated food. The eggs hatch after 26 days, and the young fledge (grow feathers) and learn to fly at about 12 weeks.

ATLANTIC PUFFIN

CARD 9

GROUP 2: BIRDS

ORDER
Charadriiformes

FAMILY
Alcidae

GENUS & SPECIES
Fratercula arctica



Nature Photographers

Looking like a relative of the penguin, or a marine version of the parrot, the squat Atlantic puffin is, in fact, related to neither family—it is a species of auk.

KEY FACTS



SIZES

Wing Length: 6-7 in.
Weight: Males, 12-17 oz.
Females, 11-12 oz.



BREEDING

Sexual maturity: 4-5 years.
Breeding season: March-April.
Eggs: 1.
Incubation: 39 days.
Fledging: About 6 weeks.



LIFESTYLE

Habit: Single or in pairs during winter months; congregate in colonies during breeding season.
Diet: Sand eels in summer. Also whitebait or various larval fish.



RELATED SPECIES

Puffins belong to the auk family, which includes the razorbill.



Range of the Atlantic puffin.

DISTRIBUTION

North Atlantic and Arctic oceans.

CONSERVATION

Pollution of the oceans in the 1960s is thought to have killed many puffins, and traditional colonies were deserted as numbers declined. Their situation has worsened due to overfishing of their food supply. Conservationists are working to limit commercial fishing.

THE PUFFIN'S BEAK AND NEST



Nest: The nest chamber is situated at the end of a six-foot-long tunnel. Both birds dig out the nest, or they may take over an old rabbit den.

Beak: During the breeding season, the puffin's beak is brightly colored (far left). This color fades during the winter, and the bill becomes smaller and turns gray (left).

Breeding colors

Winter colors

The puffin's best-known feature—its colorful beak—is used to attract mates. After breeding season ends, it changes to a dull gray color and becomes smaller in size. The puffin is also known as the sea parrot, and, although it looks awkward on land, it is perfectly adapted to its environment.



M. Lane/Aquila Productions

DID YOU KNOW?

- The puffin can swim and fly very quickly, but because its legs are positioned so far back on its body, it often crashes while landing in strong winds.
- As it preens, the puffin takes oil from a gland near its tail and applies it to its feathers to keep them waterproof.
- Puffins are inquisitive and like to inspect each other's burrows, which often leads to fights.
- On the island of St. Kilda in Scotland's Outer Hebrides, puffins were once used in making porridge.
- The puffin makes soft growling or purring noises.

BREEDING

Returning to their breeding colonies in March and April, puffins gather in dense groups offshore. Here, the pairs rub bills and coo to each other before mating and going ashore to lay the eggs.

Sometimes, a pair must dig a burrow in which to place the single egg, but they prefer to use an abandoned rabbit burrow if possible. Puffins tend to pair for life, although they do not stay together year-round. Males bring presents of grass or feathers to their mates.

The egg is laid in a chamber at the end of a six-foot-long tunnel and is incubated in turn by both parents. When the chick hatches, the parents also

share the task of catching its food and feeding it.

Predatory gulls are the biggest threats to the safety of young puffins. Once the puffin is ready to leave its parents, it must reach the sea without being detected by gulls. It does this by leaving its burrow at night and making its way to the water. It cannot fly at this stage, so it swims instead.

The following year, the young puffin will return to the colony. It does not breed until it is 4 or 5 years old.

Below: A parent puffin brings food back to its single chick. Both of the parents share in this task.



E&A Bomford/Ardea London

FOOD & HUNTING

During the summer, there is a constant stream of puffins flying back and forth between their burrows on the cliffs and their fishing grounds. Breeding success may depend on how far the puffins have to fly to find food for themselves and their hungry chicks.

The puffin's favorite food is the sand eel, which it catches by diving down into the water at great speeds. Its wings enable the puffin to swim to great depths.

Below: The puffin's beak and mouth have backward-pointing spikes that can hold several eels.



BIRDWATCH

Puffin colonies are found on and near rocky cliffs, such as those of the remote North Atlantic island of St. Kilda in the Scottish Outer Hebrides.

Early in the breeding season, it is possible to see flocks of excited puffins flying quickly and appearing to dive at the cliffs.

HABITAT

Atlantic puffins live in the cold waters of the Arctic, often hundreds of miles from land. They are most often seen singly or in pairs.

In spring, they come ashore

and gather in huge groups to breed. Although they prefer to dig their burrows in steep, grassy slopes, they may tunnel under boulder debris at the foot of steep cliffs.

GREATER FLAMINGO

CARD 10



GROUP 2: BIRDS

ORDER
Phoenicopteriformes

FAMILY
Phoenicopteridae

GENUS & SPECIES
Phoenicopus ruber



P. Steyn/Ardea London

Wading along the edges of shallow, salty lakes, the greater flamingo ducks its head as it fishes for tiny invertebrates with its boomerang-shaped beak.

KEY FACTS



SIZES
Height: 4-5 ft.
Wingspan: 55-65 in.
Weight: 6-7 lb.



BREEDING
Nest site: Open, muddy ground.
Breeding season: April-August.
Sexual maturity: 2-3 years.
Clutch size: 1, off-white color.
Incubation: 28-31 days.
Fledging period: 70-75 days.



LIFESTYLE
Diet: Small invertebrates—insects, crustaceans, mollusks, worms.
Call: Gooselike, grating call.
Lifespan: Average 20 years in the wild. Up to 50 years in captivity.



RELATED SPECIES
The lesser flamingo, the Puna flamingo, and the Andean flamingo.



■ Range of the flamingo.

DISTRIBUTION

Southern Europe, southwestern Asia, Africa, West Indies, and Galapagos Islands.

CONSERVATION

Habitat destruction and disturbance, especially by low-flying aircraft, are the main threats. Most colonies are stable, but are now always seen in the same place yearly.

HOW FLAMINGOS FEED

When it is feeding, a flamingo submerges its bill upside down underwater. It then opens its bill slightly and draws back its tongue, sucking in water through a coarse filter of bony plates that keeps out large particles. The flamingo then closes its bill and uses its tongue to force out the water through another, finer filter, which traps food particles.



Close-up of bill showing bony plates.

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The graceful, pink flamingos fly in loose flocks, in long, single lines or in V-formation. Their pink color comes from chemicals called carotenoids, which are contained in the algae they eat.

Right: Striding across the surface of the lake, a greater flamingo builds up the necessary speed for takeoff.



Left: Once they are airborne, flamingos fly well, with slow, lazy wingbeats.

BREEDING

The greater flamingo nests in colonies that often contain thousands of birds. Male and female birds build the nest together. The nest is a mound of mud, 12 to 20 inches in diameter, and, despite the

circular trench that the birds construct around it, the nest and egg are often destroyed by rising water levels.

A single white egg is incubated alternately by both parents for four weeks. The

chick is fed on regurgitated liquid called crop-milk. The chick begins feeding itself after a month, although the parents continue to feed it as well. About this time, the chick joins other young birds in a

group called a creche, taking 10 weeks to fledge (grow feathers). Young birds are grayish-brown in color, gradually turning white and pink. They attain full adult plumage at 3 to 4 years of age.

HABITAT

The greater flamingo is particular about its choice of habitat. It needs shallow, very salty lagoons and lakes in which to feed and breed successfully.

The flamingo dislikes disturbance, particularly at breeding times, and will often seek out larger expanses of water

for solitude.

In winter, the northernmost colonies of greater flamingos in Asia will migrate south to the warmer coastal areas of Iran and India. Most other colonies will overwinter if the weather stays mild, but they will move on if weather conditions change.



Left: An American flamingo turns an egg during incubation.

Right: A chick begins feeding itself at about 30 days old.



Far Right: Flamingos gather in the thousands.



DID YOU KNOW?

- What appear to be the flamingo's knees are actually its ankles, which bend backward when the bird sits down.
- In ancient Rome, flamingo tongues were considered a delicacy. As recently as 30 years ago, flamingos and their

- eggs were eaten by people in parts of southern Europe and the Caribbean.
- Many children came to know flamingos when they were depicted as the croquet mallets in Lewis Carroll's famous story, *Alice in Wonderland*.

FOOD & FEEDING

The flamingo filters food from the water in much the same way as the blue whale. It uses its specially adapted bill to capture and filter its food—a combination of protozoa and algae, as well as crustaceans, mollusks, and insects.

The flamingo's long legs enable it to wade through deep water and mud in search of food, and its long neck allows it to reach food at some depth. It can also swim easily and will partially submerge itself in order to feed.



SPECIAL ADAPTATIONS

The flamingo is found in extremely alkaline soda and salt lagoons. The chemical makeup of the water is so strong that it would remove the skin from a person's legs in seconds. To feed in such

water, the flamingo has developed especially tough skin on its legs. However, if the soda is too concentrated, it can crystallize around the flamingo's legs, and the bird will become immobilized.